INDIA RUBBER WORLD AND ELECTRICAL TRADES REVIEW

Published on the 10th of each Month by

THE INDIA RUBBER PUBLISHING CO.

TIMES BUILDING, NEW YORK, U. S. A.

JNO. R. DUNLAP. H. C. PEARSON.

Vol. 14. APRIL 10, 1896. No. 1.

SUBSCRIPTIONS: $3.00 per year, $1.75 for six months, postpaid, for the United States and Canada. Foreign countries, same price. Special Rates for Clubs of five, ten or more subscribers.

ADVERTISING: Rates will be made known on application.

REMITTANCES: Should always be made by bank draft, Post Office Orders or Express Money orders on New York, payable to THE INDIA RUBBER PUBLISHING COMPANY. Remittances for foreign subscriptions should be sent by International Post order, payable as above.

DISCONTINUANCES.—Yearly orders for subscriptions and advertising are regarded as permanent, and after the first twelve months they will be discontinued only at the request of the subscriber or advertiser. Bills are rendered promptly at the beginning of each period, and thereby our patrons have due notice of continuance.

Entered at New York Post Office as mail matter of the second-class.

TABLE OF CONTENTS.

	PAGE.
Editorial:	
The Reciprocity Will-o'-the Wisp	191
Views of Railroad-Men on Air-Brake Hose	193
Brief Abstracts of Recent Rubber Patents	196
Germany's Improved India-Rubber Trade	197
Rivers of the South American Rubber Country	198
New Goods and Specialties (*Illustrated*):	
A Practical Paper Weight	201
Tillinghast Tire Welder	201
Two Tyrian Novelties	201
A New Hose-Reel	201
The Aldrich Force Pump	201
Kohler's Quick Fit Wooden Hose-Nozzle	202
Non-Kinkable Attachment	202
Koenig's Safety Respirator	202
The Cycle Shade	202
The Crescent Giant Sprinkler	202
The Grappler Pneumatic Tire	202
The W. P. Armored Tire	203
The Lutz Reflow Bulb Syringe	203
Condition of the Rubber Trade in Chicago	204
Changes in the New York Rubber District	206
Single Tube Tires and the Tillinghast Patents	209
The Month in the Rubber-Goods Trade	211
Miscellaneous:	
Wages in the Scotch Rubber Trade	195
Another Rubber Expert Interviewed	199
"Perfection" Air Mattresses on Ships (*Illustrated*)	200
The India-Rubber Crop of Lagos	203
Death of Fowler M. Ray	213
Sold Most of his "Rubber Common"	213
New Trade Publications	214
Mr. Flint and the Rubber Trade	214
A Pool in Gas-Tubing	215
Random Notes from Pará (*Grao Para*)	216
India-Rubber Cases in Court	216
Antwerp as a Rubber Market	217
The Best Fire-Hose is the Cheapest	217
Rubber Statistics from Para and Washington	215
Trade and Personal Notes	218
Review of the India-Rubber Market	220

THE RECIPROCITY WILL-O'-THE WISP.

A COMMITTEE of congress has been conducting an investigation into the subject of reciprocal trade relations with Latin America, involving the results of the reciprocity arrangements formed under the late "McKinley law" and afterwards terminated by congress without notice to the other countries in interest. The committee's work has been confined mainly to hearing the opinions of manufacturers and others supposed to be interested in an enlargement of the export trade of the United States. While it is a commendable thing for our lawmakers to be concerned about the commercial interests of the country, within the scope of the constitutional provision on the subject, it has been far from satisfying to read the published opinions even of the most important business concerns heard from —headed by persons whom the members of congress, who are not, as a rule, business men, might well be excused for considering as high authority on the subjects mentioned.

One point upon which there appears to be unanimity is that it would be desirable for American manufacturers to secure orders for a larger share of the textile and metal goods required by our neighbors in the far south. But in none of the published expressions from the sources referred to has the idea found place that the way to sell goods is to sell them. As a successful rubber-man said to THE INDIA RUBBER WORLD last month, the movement of merchandise from the factory is promoted far less by the insistent demands of consumers than by the energetic efforts of merchants to sell goods. There can be no sounder commercial maxim than this, and it applies equally to the sale of goods in one's own city or state, and in the remotest country on the globe. It is to this idea that we would call special attention.

The minds of the congressional investigators have been occupied also with the export statistics of the United States for the period while the McKinley reciprocity measures remained in force. It must be admitted by everybody that these figures, taken alone, are not calculated to win enthusiastic support to the idea of reciprocity treaties as a means for the advancement of trade. Only with Cuba was American trade sensibly stimulated under the late reciprocity arrangements. Yet it is probable that these same reciprocity treaties, so far as their form was concerned, were the most important ever concluded between commercial nations. The situation was this: A number of states, nearer to us than to Europe, selling to us largely of their natural products, but buying largely from Europe of manufactured goods which could have been equally well made in the United States, agreed to admit many classes of these goods free of duty, and certain other classes at reduced duties, when imported from the United States, the old tariff rates being maintained against all other nations. This concession in favor of the United States ought to have been more than sufficient, in many cases, to offset any increased cost of production in the United States as compared with Europe.

But as we have seen, the effect of this law upon our export trade was almost *nil*. And no wonder. Laws on the

statute-books at Washington can no more promote trade, without exertion by the trading classes, than the by-laws of a rural debating-club could do it. Before the manufacturers of the United States can export many goods to Mexico, Havana, Buenos Ayres, Rio de Janeiro, Pará, Iquitos, Caracas, Cartagena, Guayaquil, Lima, or Santiago, the people of those capitals must first know of the existence of such goods, and, secondly, have an opportunity to buy them. Did the mere passage of the reciprocity law of 1890 convey any knowledge of American goods to the people on the Magdalena or the Amazon or the Plate? Or did it carry our goods away on the clouds to southern seaports and fill stores with them? Of course not.

It is safe to say that no important exertions on the part of our manufacturers to increase their exports followed the reciprocity treaties. If such exertions had been made, the results would doubtless have been profitable. If they were made to-day, they doubtless would prove profitable, without regard to any statute laws, past, present, or future. The history of this country is full of individual examples of the success of American enterprise in trade with the southern continent. We have printed a sketch of John Bertram, of Salem, Mass., whose great fortune was founded in part on his early voyages to Brazil in ships laden with our wares to be exchanged for the products of that country. We have also recorded the early importation of crude India-rubber by what afterward became the Candee Rubber Co., in connection with which some American products were so successfully introduced into Brazil that no foreign competition has ever been able to displace them. It is not in South America alone that success has attended American commercial enterprise abroad. A firm who advertise in THE INDIA RUBBER WORLD regularly make shipments to Persia, to points reached by camel journeys of over a thousand miles—goods with which no European manufacturer has ever been able to compete. Another of our advertisers is selling goods in South Africa at higher prices than anybody in Europe or America is willing to pay, and holding the market successfully against England and Germany. By the way, the recent marvelous development in the South African mining district has been wrought with the aid of American machinery, although the capital invested comes mainly from England. But all these things have been sold because efforts have been made to sell them —not because of anything in the statute-books.

We would not discourage the attempts of any congressional committee to further our commercial progress, by new reciprocity treaties or otherwise, but it would be a matter for regret to see any merchants and manufacturers continue to play the baby-act in waiting to see congress "do something" before starting out themselves to sell goods in any country where they would like to have customers. If any manufacturer is satisfied with his home market there can be no quarrel with him. It is too much for human patience, though, to see men who want to reach foreign markets sitting back as if awaiting some magic act of congress which should pick up their goods, transport them thousands of miles, thrust them into the hands of astonished buyers, and carry home stacks of specie in return for them.

SO MANY RUBBER HOUSES in New York are removing into larger and better-appointed quarters thatone is forced to wonder whether some of the prevailing talk about dull times is not rather the result of habit than a correct indication of business conditions. Usually more is heard about one house that fails than about ninety-and-nine that go on prospering, and too many people are prone to keep their eyes upon the unfortunate one until the others are completely lost to sight. No individual manufacturer, no matter how much he has been complaining, will admit that he has made fewer goods this season than last, or in the season before, and everybody knows that one cannot continue making goods unless they find a sale. There have been millions of farmers and mechanics and mill-hands at work, through good and hard times alike; the country has been improved all the while; and there has been an increase of real wealth and buying power. Then why not stop talking as if the corpse of the panic of 1893 were still alive, stop watching congress, and stop complaining that times are dull?

THE RAILROAD-MEN are doing a good work in taking up the study of the rubber hose needed in the various services on trains. Schools of instruction in the use of the air-brake have been established on several roads, and an association of air-brake men has been organized, the effect of all of which will be to disseminate among trainmen better ideas with regard to rubber hose and its treatment, The expense of all this will be repaid to the companies through the more careful handling of their hose. Not only this but the systematic instruction of the employés on every road in the quality and uses of rubber will result in time in driving out of use all but a good quality of hose. This would be welcomed by manufacturers as a class.

OUR LETTER FROM CHICAGO this month is a reminder, to those of our readers who never get so far from the Atlantic seaboard, of the great western empire of which that city is the natural commercial center. New York and Boston have no reason for jealousy at the increasing importance of Chicago and St. Louis as distributing centers. The sale of products of every kind is facilitated by placing stocks as near as possible to the consumers, no matter where the goods may be made. The east may well be content to retain supremacy in the manufacturing interests, which, in the case of most rubber lines at least, is likely to continue for a long time to come.

IT IS NOT WORTH WHILE to look for cheaper India-rubber, and manufacturers and buyers and users of rubber goods must become accustomed to a higher range of prices than has prevailed within the recent past. Not that the rubber forests are failing, but on account of the steady growth of the demand for rubber in the United States and throughout Europe. Its sources are in the most inaccessible parts of the globe, in countries ill suited for civilized races, and while the increasing consumption does stimulate production, it is by no means at such a rate that we may ever expect to see the market glutted for many days at a time.

ON GENERAL PRINCIPLES, a trade discount on any line of goods ought to be the same to all buyers of the same class, at all times of the year. The rubber-shoe manufacturers appear to have been led by experience to this conclusion.

IN REPLY TO A CORRESPONDENT who asks whether any other than fine Pará rubber is used in bicycle-tires, we can only say that if it is, no manufacturer has considered the fact of enough importance to mention it in his catalogues.

VIEWS OF RAILROAD-MEN ON AIR-BRAKE HOSE.

THE paper on "The Bursting of Air-Brake Hose," read recently before the Western Railway Club (Chicago) by A. M. Waitt and published in the last INDIA RUBBER WORLD, was discussed at length at the December and January meetings of the club, eliciting many interesting facts and opinions from the practical railroad-men present. Some of these will be summarized this month for the benefit of rubber-manufacturers, particularly, and as a step toward bringing about that better understanding between them and purchasers which more than one member of the club expressed a strong desire to see.

I. HOSE BURSTING AND WRECKS.

THE main point kept in mind during the discussions referred to was this: Does the bursting of air-brake hose, as it may occur in freight trains, cause wrecks? Upon this point there was a wide difference of opinion. At the outset Mr. Waitt had called attention to the fact that the railway companies had not yet become able to equip all their cars with air brakes, or even all the cars going into certain trains. Hence, from a number of cars destined to go into a train, those equipped with air are switched to the front, and then, if there is a sufficient number of such cars to control the train by air, these few are depended upon to do the work of stopping the entire train. Under ordinary conditions all may go well until an accident occurs. But, if the hose should burst, or if an emergency application should be required, "the sudden exhaust of air from the main train-pipe on the five or ten air-brake cars forward gives the emergency application on these cars, and the oftentimes larger and heavier portion of the train in the rear, with no check on its momentum, piles up promiscuously on to and over the front cars, causing frequently thousands of dollars of damage, and, as is too often the case, the serious injury or death of employés or others." Both in his paper and in the ensuing discussion Mr. Waitt recited facts to support his contention that hose bursting is responsible for a great amount of damage.

J. N. BARR (*Chicago, Minneapolis and St. Paul railway*) said, in substance: We can say almost to a cent how much damage is caused to our rolling-stock from any cause while on the road. From January 1, 1894, up to the present time [December, 1895], I find by our record that the damage charged to hose bursting was $2.60. We have had a number of expensive cases of damage from trains parting, but they have not been attributed to hose bursting. I do not know but what it would be good economy for the railroads to let hose burst before it is taken off. I do not take that position exactly, just now, but I am satisfied that the amount of actual damage from hose bursting is almost infinitesimal. I will say that nine-tenths of the damage to cars on our road arises from trains parting and coming together again, and there the air-brake comes into very serious play, because many of the cases have been caused by the air-brake setting on the forward part of the train [when the rear cars were not equipped with air], and causing much more serious damage than would have occurred if there had not been any air-brake on at all. I do not believe that hose bursting is the cause of the damage. I do not believe that we are warranted in going to such an extraordinary expense in the way of maintaining hose. There are a great many things that we must wear until they are worn out. I am inclined to think that, with the test that trains receive from the air-brakes, applied before they go on the road, if that test were 15 or 20 pounds higher than the service work on the road, it would meet every requirement and detect every burst hose in ample time to prevent any damage on the road. Later in the discussion Mr. Barr said: "About three days ago Mr. Manchester and I looked over a pile of about 500 burst hose. But we have not had in that time 500 wrecks. That is the point I wish to get at, namely, the particular point that a burst hose does not necessarily mean a wreck."

JOHN W. CLOUD (*Westinghouse Air-Brake Co.*), speaking of the reported replacing of 13,800 pieces of hose on one road between August 1 and November 1, said: "And they had 47 wrecks on the road, due to burst hose principally, from January 1 to November 1, and they have not had any in the last two months [of that time]. Evidently the hose needed renewing on those cars, and perhaps the car-couplings were too weak. I agree with what Mr. Barr said with regard to burst hose—that most hose which bursts will not cause any damage."

II. AIR-HOSE GUARANTEES.

G. W. RHODES (*Chicago, Burlington and Quincy railway*): The question of guarantees on hose is one that has had a good deal of attention lately, but I think some of the methods of carrying the guarantee are inefficient. Here is a comparatively new hose. If you examine it you will find that the dates are already rubbing off, and the probability is that in the course of a year and a half the record carried on this particular hose will be of no value. This was put on in the early part of 1895, and the 1895 figures are already gone. Some railroads are going to a good deal of expense in using wire-wrapped hose. Here is a comparatively new wired hose, but you will see it has not escaped damage. It has been torn in two. The hose is useless, although it is quite new. It has some kind of a tin record, but the record is already illegible, and twisted up so as to be worthless. Here is another wired hose. How it became damaged I do not know. Wired hose must be more expensive than ordinary hose, and I doubt its efficiency.

DAVID L. BARNES (*mechanical engineer*): There is a wide difference between guarantees that relate only to replacements and the assurance that comes from close inspection and test. How many coupler- or hose-makers are there who would be willing to add to the replacement guarantee an additional one to cover all losses directly traceable to the failure of the goods? Manufacturers should not be asked to go to such illogical ends. They offer goods believing them to be safe, and it remains for a railroad purchaser to select by a careful examination that grade which will fulfill the practical requirements of service. There will be trouble with all classes of railroad supplies so long as purchasing-agents rely solely on the advertisements, representations, and replacement guarantees. If we are to judge by the experience on other roads, Mr. Waitt's trouble can be cured by using the proper quality of hose and lots of it, so that no car shall leave an inspection point with a suspicious-looking hose or coupler. This may temporarily increase the cost of air-brake repairs, but this increase will be many times repaid by the saving in wrecks where the condition is as bad as Mr. Waitt's paper describes. In the future one may trust that all roads will use good hose and couplers and that inspectors will be able to pick out all defective hose during a rapid inspection; meantime what is needed is a good standard test for hose that will rule out the abominable combinations of rubber and cloth now sometimes sold for air-brake hose. With this all can select proper material, but without it, it is as difficult for the purchaser to make a proper selection as it is for the manufacturer to suit the ranging requirements of the present specifications.

III. THE TESTING OF HOSE.

A. M. WAITT (*Lake Shore and Michigan Southern railway*): I have been keeping a record for over two years of all dated hose removed from either a Lake Shore or a foreign car [coming over our line]. One of the best makes showed an average life of all dated hose removed, burst, or worn out, of only 23 months on those removed from foreign cars, and 25 on our own. The nearest to that was 19 months, and the next nearest average of a maker was 11 months. That is a fair sample, I believe, of what we can expect from air-brake hose as it is made to-day by the best makers. I do not know but what it means that we have got to go to a greater expense, or find a better substitute for rubber between our cars. It is an enormous expense. We have put on the Lake Shore 13,800 lengths of hose—6900 on foreign cars, and most of those at our own expense—for the reason that we have had from January to November forty-seven wrecks, and some of them serious ones, on account of burst hose. We are not allowing a hose to run after it is so cracked through from kinking or some other cause as to show the rubber open to a considerable extent so as to expose the canvas, for hose-makers tell us that as soon as the water gets into the canvas we can no longer rely upon it.

With regard to the 110 or 115 pounds' test Mr. Barr spoke of, our experience has been that we have put good appearing hose 2½ years old under that test and then stencilled it "100 pounds' test," and with date- and shop-mark, and put it on Lake Shore cars and found that they came in frequently, having burst within two or three days. It had stood the 100 pounds' test, and been broken under 70 pounds [in practice]. I believe we can better afford to put on new hose to quite a considerable extent where hose is suspicious, where it is badly cracked, or where it has reached the average life of hose shown by records, than run the risk of having either delays or expensive wrecks on our lines.

A. E. MANCHESTER (*Chicago, Minneapolis and St. Paul railway*): Mr. Waitt seems not to approve of testing on a rack—vibrating the hose under pressure. His paper does not give any reason for that, other than that I presume it does not subject the hose to actual service test. In his remarks to-day, Mr. Waitt said that a record kept of the different makes of hose showed that some of them run 25 months, and other makers' hose run 11 months. Now if a large road should be unfortunate enough to be dealing with that particular maker whose hose lasts 11 months, it might be quite a serious matter of expense to them not to have the advantage of knowing the better maker. Now I would like to ask if anybody present can suggest a test that will give a reasonable idea of the quality of the hose we are buying, so that goods that fail to meet the specifications may be rejected. We do use the vibrating rack to test a few hose from each lot. While I am not prepared to say that we know very much about which makers' hose is the best, we have had results from which, if carefully followed up, I think we may be able to learn something. I know that one lot of hose received a short time ago failed at from 38 to 50 hours on the rack. Other hose has lasted as long as 450 hours on the rack. We have quite frequently hose sent in on account of defective fittings, fittings having been damaged in service. The hose is practically new, but we have been unable to find any way of removing those fittings so as to turn the hose back into service and get a safe hose.

IV. THE WEAK POINT IN AIR-HOSE.

J. F. DEEMS (*Chicago, Burlington and Quincy railway*): This morning I looked over 168 burst hose and I have here a rough sketch of an air-hose divided into sections to show the location of the ruptures and number and percentage of the same for each section, to show what proportion of them fail at the different points. It appears that of the total number of burst hose examined, 71 per cent. failed at a point between the center and the pipe connection, and 50 per cent. failed within three inches of this connection.

We also found that in many cases the rupture would occur where there seemed to be a lap or seam in the duck. This was especially noticeable in hose where this seam runs parallel with the hose and the fittings are put in to bring it on the outside of the curve when the hose is coupled up or hooked up in the dummy-couplings. But where the seam was on the inside the effect was not so marked. It would seem to me that in putting the fittings into hose that show this parallel seam something might be gained by putting them in to bring it on the inside of the curve. Some of the hose inspected seemed to have a piece of duck about ¾ inch wide wound specially just underneath the outside rubber coating, and in most of these cases rupture will occur at the edge of this narrow piece, and parallel with it. The evil effect of the dummy coupling was plainly shown, and doubtless in a great measure accounts for the 71 per cent. of failures near the pipe fitting, which is rather at variance with Mr. Waitt's statement that hose fails "without exception" on account of the effects of heat and cold.

Mr. Rhodes said: Our investigations point to the fact that the hose failures were largely due to the kinking of the hose. In 1893–94 we had a very rigid rule on the Chicago, Burlington and Quincy road, requiring all hose to be placed in the dummy-couplings. Finding out the large expense which we were incurring in hose, and noticing that they ruptured frequently where they were kinked, we did away with the dummy and let the hose hang straight four inches from the top of the rail, and we believe this is one of the reasons why we have had fewer hose failures in the last year.

V. KINKING HOSE AND DUMMY-COUPLINGS.

MR. WAITT exhibited at the January meeting some burst hose to show that the burst would occur as far as possible from the part that was badly kinked, contrary to the theory held by some railroad men. One piece of hose was so badly kinked that it was cracked through to the canvas at two points, and it was badly burst between those points. "It was suggested that, if I cut the hose open, it would be found that this burst portion originated in the kink, and that a hole starting from a split of the inside rubber casing would be found to have worked its way out. So I cut the hose in two, and on looking in I found there was no connection near or remote between the hole caused by the bursting and the very bad kinks at both ends of the hose. It was a clean burst right between the two. The age of the hose I am unable to tell. I have another specimen, made, it seems, in December, 1893. When removed, December 24, 1895, it had been in use just two years. This is a hose that some persons, from looking at it, would think might be all right to run. It is not kinked badly enough or cracked badly enough at any point to expose the canvas, and it would be considered by many a great waste of money to remove a hose of that kind. Yet it burst on the road and wrecked several cars on December 24. On December 25 we had two wrecks on our road from the same cause. In one of them I think three cars were badly used up. I brought this sample because it is a hose that anybody would ordinarily pass, thinking that it was good enough; that it had not lasted even to our limit of two years and six months. I have here also a hose that is very badly kinked. It has burst right near the kinked point, and I cut that open and brought it as a sample of a hose that did burst as a result of the kinking, showing that in some cases the kinking on the

outside cracks the rubber on the inside, and oftentimes the air will force its way through and burst. This did not tear the hose, but just blew off a piece about the size of a silver dime on the outside rubber. That is the only indication of its having burst.

It was announced during the discussion that the Chicago, Burlington and Quincy railway had abandoned dummy-couplings for air-brake hose, after an unusually thorough test of them. Mr. Rhodes, of that company, said that when hung up the hose always kinked, which was a disadvantage. "I am well aware," he said, "that a change was made by the Master Car Builders' Association in 1893, and the standard dummy-couplings now are attached to the carry iron draw-bar bolt in such a way as not to kink the hose when it is hung in them, and that is a decided improvement over the old way; but go to-day through some of the principal car-shops that are building cars with air-brakes, and where do you find the dummy? Just stuck on the end sill with a lag-screw, and when the hose is hung up it will be kinked from the start." He said that when cars were in the yard, moving about, and dummy-couplers were not used, the hose would not sway backward and forward more than comes naturally when it is in use coupled up.

It was also mentioned that the Chicago, Minneapolis and St. Paul railway had resolved to discontinue the use of dummy-couplings for air-brake hose. The company could not see that a hose hung up in a dummy-coupling when not in use was in any way more serviceable or less liable to produce trouble by the collection of dirt than if it hung down. Besides, the tendency to kinking of the hose was really a serious question.

In conclusion, Mr. Waitt said he had written to fifteen leading railroad companies for expressions with regard to dummy-couplings for hose, and with two exceptions—those named above—they were strongly opposed to the discontinuance of the coupling.

VI. COST OF HOSE EQUIPMENT.

IT was agreed that the cost of hose for air-brakes is an important item on a great railroad system. Mr. Barr said that his road, with an equipment of 20,000 freight-cars, required 40,000 lengths of hose, which cost $40,000. If the hose lasted only two years, it meant a yearly fixed expenditure of $20,000, simply for the maintenance of hose. "If the rigid inspection which has been proposed were carried out," said he, "I have no doubt but what a great many hose that we now run indefinitely would be removed on account of indications of cracking, etc., that might otherwise give quite a considerable service. By making a cast-iron rule we can easily put an expense on our companies of tens of thousands of dollars, and I question whether we would get one cent in return for it." G. W. Rhodes said that his company, during the year ending September, 1894, paid $12,000 for air-brake hose, and for the year ending September, 1895, they paid $8000, on about 7000 cars.

Mr. Cloud said: Mr. Waitt wrote in his paper: "Air-brakes on freight-trains are by no means a novelty, but as a result of the passage of the so called 'safety-appliance act' of 1893, the equipping of freight-trains with air-brakes has been given a great impetus." I have taken thirty months prior to March 1, 1893, and thirty since then. The Westinghouse Air Brake Co. showed in the thirty months prior to March 1, 1893, the sale of 136,388 sets of brakes, and in the thirty months subsequent to that act it showed 91,724 sets of freight-brakes, or 4544 per month in the first period, and 3057 in the second—approximately 50 per cent. more in the former period than in the latter. So far as other air-brake companies are concerned, the numbers are insignificant. I do not know where the impetus is, therefore. A financial crisis at about the same time the law was enacted checked the application of brakes more than the law hastened it. I believe that air-brakes have been bought and applied to freight-cars because it is more economical to handle the traffic in that way.

VII. A HINT TO MANUFACTURERS.

GEORGE GIBBS (*Chicago, Minneapolis and St. Paul railway*): This is one of the most puzzling subjects I have ever taken hold of, and is still much of a mystery to me, even after I have devoted some attention to it, and to steam-hose especially, for several years. There seems to be absolutely no definite information obtainable in published accounts as to the methods of manufacture of hose, its composition, and the service to be expected of it. I hope this discussion will bring out a paper from some rubber-manufacturer, giving details as to the make-up of various kinds of rubber hose, and the influence of quality and manufacturing methods upon its life in use. It is possible there are trade secrets involved in the manufacturing processes, but it seems to me the rubber-manufacturers are equally interested with us in bringing out a full discussion of the discussions met with in use. We are doing our part by telling what the defects are; they, on their part, should help us by telling us what the inherent weaknesses of the article are, and how we may avoid the use of inferior qualities which may perhaps cause us serious expense in the directions, for example, pointed out in this discussion. There seems to be no standard of quality to measure hose by, and no test which you can make in a laboratory or in a shop which will give any approximation to the probable life of a hose. I think Mr. Manchester mentioned that we make, on our road, a vibrating shop test, but it often happens that a half-dozen pieces of new hose from the same maker will show a duration in the best piece of five times the life of the worst.

WAGES IN THE SCOTCH RUBBER TRADE.

OVER the signature "Some White Slaves," a letter appears in the London *India-Rubber Journal*, which is given herewith: "We would like to draw the attention of the trade to the condition of affairs in the waterproof trade of Glasgow, and in particular in a certain waterproof manufactory. During the past four years the pieceworkers' wages have gone down at a disgraceful rate, reduction at the rate of 60 per cent. being the order of the day. Expert workers, whose wages four years ago averaged 18*s.* to 22*s.*, now find it impossible to make 10*s.* to 12*s.* During the dull season, which lasts about seven months, the wages are from 3*s.* 6*d.* to 5*s.*, and in many instances they are much less. We are now informed that there is to be another reduction. Garments that we were paid 3*s.* for making up a short time ago are now reduced to 1*s.* A notice has been issued to the effect that if we won't accept this price we are to send in our notice. In plain English, if we won't work at starvation wages we can take the streets, as our employers are well aware this is no time to get employment in the other rubber warehouses. At present there are about 800 garment-makers in Glasgow. If the workers in this particular warehouse accept the prices forced upon them, they will reduce the wages all round, although coats and mantles are selling at a higher figure than ever. What we would like to know is this: Who pockets the profits? The masters say that they cannot afford to pay higher rates. We work for next to nothing, material is one-half less than it was ten years ago, and the goods are sold at much higher figures. We do not believe that in Glasgow there is any [other] skilled trade so poorly paid. We think it is time all hands in the different shops combined to prevent this unholy competition among a half-dozen masters in Glasgow."

BRIEF ABSTRACTS OF RECENT RUBBER PATENTS.

AMONG recent patents issued by the United States Patent Office, embodying applications of India-rubber or Gutta-percha to a greater or less extent, have been the following. It is not practicable here to do more than to note the use of rubber in each case, with sufficient detail to enable those who are interested to decide whether or not to look into any particular patent more fully:

TIRES.

No. 553,869.—Inflatable Wheel-Tire. Anthony Pulbrook, London, England.

In combination in an inflatable wheel tire, two or more air-tight tubes placed inside one another, the external diameter of each internal tube being less than the internal diameter of the tube surrounding it, so as to leave air-spaces between the tubes, transverse partitions at intervals in the air-spaces for holding the tubes apart and for subdividing the air-spaces between them, and flexible material which is more or less non-puncturable or more or less difficult to puncture interposed in the air-spaces or in some of them.

No. 554,493.—Bicycle-Tire. Orman W. Ketcham, Brooklyn, N. Y.

In a bicycle-wheel the combination of a tubular band having a series of transverse slots ending in openings, the walls of the tube being separated at the tread surface and having circumferential T-shaped grooves in the sides, a rubber band or tire fitting over the tread surfaces with its edges secured in the grooves.

No. 554,675.—Rubber-Tired Wheel. Arthur W. Grant, Springfield, Ohio.

A vehicle-wheel having a metallic rim with outwardly projecting flanges at an angle to the plane of the wheel so as to form a channel or groove having tapered or inclined sides, a rubber tire, the inner portion of which is adapted to fit in the tapered grooves or channel, and the outer or exposed portions formed at an angle thereto, the angle or corner between the portions being placed within the outer periphery of the flanges, openings extending entirely through the unexposed portion of the tire, and independent retaining-wires in the openings, and a reinforcing strip of fibrous material placed at the bottom of the tire and wholly within the flanges.

No. 554,711.—Pneumatic Tire. Joseph G. Moomy, Erie, Pa.

In a pneumatic tire the combination with the outer cover thereof open on its inner periphery; the rim; and a binder for binding the edges of the cover to the rim; of a tube having its outer periphery formed of rubber of natural elasticity and its inner periphery with fiber-stock.

No. 555,046.—Pneumatic Tire. William T. Kennedy, Indianapolis, Ind.

In a pneumatic tire having a continuous channel around its tread portion for reception of a shield, and a shield therein having continuous beaded edges, the combination with the channel of the grooves at each side of the channel; the metallic band or shield having continuous wire along its edges held in place by the edges of the band being turned over it forming the bead, this beading fitted into the grooves at sides of channel; the outer covering attached to the metallic band, the covering being composed of a continuous strip of canvas next to the metallic band, a strip of rubber next outside forming the tread and inclosing a strip of canvas.

No. 555,344.—Testing Device for Pneumatic-Tire Valves. Asahel M. Shurtleff, Boston, Mass., assignor to Codman & Shurtleff, same place.

A device for testing air-valves for leakage, comprising a rigid stand, a liquid receptacle mounted in such stand and constructed as a manually compressible bulb to effect the displacement of the liquid therein, and a transparent test-tube connected and communicating with such liquid-receptacle and adapted to receive the liquid displaced therefrom, in which liquid in the test-tube the valve to be tested is submerged.

No. 555,480.—Device for Putting on Rubber Tires. Arthur W. Grant, Springfield, Ohio, assignor to the Rubber Tire Wheel Company, same place.

A device for putting on rubber tires consisting of pivoted bars arranged in the same plane and having adjustable trunnions extending laterally therefrom, and vertical and horizontal rollers journaled on the trunnions on each of the bars.

BOOTS AND SHOES.

No. 553,933.—Fastener for Overshoes. George C. Poling, Harlan, Iowa.

An overshoe-fastening device, composed of a single piece of spring-wire having two loops to admit rivets, a rearwardly-bowed portion between them, a coil formed in the wire beneath the loop and a part extended upwardly from the coil through the bowed portion with its upper end inclined rearwardly and a spur formed on the upright part to extend through the overshoe and engage the shoe.

No. 554,174.—Overshoe-Retainer. Frank F. Foster, Snohomish, Wash.

In a securing attachment for overshoes, the combination with a loop or eye on the overshoe, and a strap passed loosely therethrough and doubled upon itself, of the combined buckle and shoe catch, comprising a frame having one end-portion bent to form the catch-hook, and its opposite end to form a guide for the strap, and a lever pivoted in the frame, this lever having a toothed portion, and an arm to which one part of the strap is secured.

No. 554,468.—Felt Boot. Theodore S. Very, Boston, Mass.

A seamless felt boot having a seamless inner surface formed to cover the entire foot of the wearer, wear-resisting and waterproof bottom and side reinforcements, and a top reinforcement or hinge of the material described cemented to the upper surface of the fore part, and adapted to prevent disintegration of the felt by the flexure to which the fore part is subjected.

MECHANICAL GOODS.

No. 553,877.—Apparatus for Lining Hose. Benjamin L. Stowe, Jersey City, N. J.

In a hose-lining apparatus, a steam-pipe and conical nipple over which the hose is drawn, secured at its base to the steam-pipe, in combination with a clamping-cone adapted to pass large end foremost around the nipple from the rear thereof, and having a guide and retaining-head which fits upon and around the pipe.

No. 553,940.—Nozzle-Holder and Spraying Attachment for Garden-Hose. Gerrit J. Rollandet and William B. Gray, Denver, Colo., assignors of one-half to Fred S. Lack and William E. Stone, same place.

A combined nozzle-holder and spraying device comprising an extensible body part having springs, adapted to embrace the nozzle, a depending projection and a forward extension and a reversible spraying-shoe composed of a bent plate, this shoe being so attached to the extension of the base that its two sides are unequally inclined when presented to the water.

No. 554,155.—Hose-Band. Henry S. Teal and John W. Crate, Chicago, Ill.

In a hose-band, a flexible body consisting of wire members and a strap, combined with a lever fulcrumed on the body and having a pawl or catch, the strap being indented to form on one side thereof depressions to receive the pawl or catch of the lever, and on the other side projections to be embedded in the hose.

No. 554,649.—Hose. William F. Bowers, San Francisco, Cal.

Hose consisting of an inner rubber lining, an outer textile-fabric covering, and an outer rubber collar on the end section

having its inner portion permanently embedded in the interstices of the textile-fabric covering.

DRUGGISTS' SUNDRIES.

No 554,071.—Nursing-Bottle. Herman Matzen, Cleveland, Ohio.

A nursing-bottle consisting of a rigid top part open at both ends, and constructed at one end with a neck to receive a nursing nipple and at the other end to temporarily attach a flexible part, in combination with a flexible and collapsible part connected to the rigid part and of a size when expanded to fill the interior of the upper part to the neck.

MISCELLANEOUS.

No. 554,385.—Garment-Stay. Nellie J. Wilkins, Boston, Mass.

A composite stay for garments, comprising a thin resilient metallic body and a thick soft rubber body having coincident surfaces secured face to face throughout their entire length.

No. 544,645.—Device for Melting Sealing-Wax. Nathan Bimberg, Elmira, N. Y.

A device for melting sealing-wax in applying seals, consisting of a receptacle provided with a wick-tube and a projecting handle, an air-tube terminating at one end near the end of the wick-tube and at the other end connected to a flexible tube, and an air-bulb connected by the flexible tube with the air-tube and lying so that both the handle and bulb may be grasped by the hand in operating the device.

No. 554,696.—Vacuum Cup Bicycle-Pedal. Elijah T. Harris and Albert S. Reed, Chicago, Ill.

The combination with a bicycle pedal, of a vacuum cup detachably mounted thereon, whereby the vacuum cup may be removed from the pedal at will.

No. 554,740.—Adhesive Plate for Artificial Dentures. Joseph Spyer, Mexico, Mexico.

As a new article of manufacture, an adhesive plate or blank composed of gutta-percha and gum-tragacanth, thoroughly incorporated, formed into a sheet, and cut into the shape of a hard-rubber denture to which it is adapted to be attached by vulcanization.

No. 554,933.—Mucilage Moistening Device. Nicholay Jensen, Washington, D. C.

A moistening device for gummed surfaces and like uses comprising among its members the elastic fluid receptacle, the nipple secured thereto and communicating therewith and provided with absorbent material, and the holder having tapered walls, for engaging the elastic receptacle and forming a substantially air-tight joint, the holder having a recess in its bottom to receive the nipple and absorbent material, the diameter of the recess being less than the diameter of the nipple.

No. 555,383.—Dress-Shield. Virginia Lavallette, Philadelphia, Pa.

A dress-shield consisting of two frames, one of which has a curved top-piece, and the other having a cross-piece with a spring attached to the curved top-piece, and fastening-pins on the frames, the parts being combined.

TRADE-MARKS.

No. 27,757.—Pneumatic Bicycle Tires. Spalding & Pepper Company, Chicopee Falls, Mass. Filed Dec. 27, 1895.

Essential feature.—The letters "S" and "P," arranged on the opposite sides of an ampersand, inclosed by a circular figure. Used since September 1, 1895.

No. 27,846.—Dress-Shields. The Canfield Rubber Company, Bridgeport, Conn., and New York, N. Y. Filed Oct. 31, 1894.

Essential feature.—A representation of a spread-eagle in gilt upon a green background and inclosed by a rectangular border in green and gilt coloring. Used since October 1, 1890.

No. 27,879.—Elastic or Pneumatic Tires. Boston Woven Hose and Rubber Company, Boston, Mass New York, N. Y., Chicago, Ill., San Francisco, Cal., and Cleveland, Ohio. Filed Feb. 3, 1896.

Essential feature.—The word "Vim." Used since February 25, 1895.

GERMANY'S IMPROVED INDIA-RUBBER TRADE.

IN a review of the German rubber trade for 1895, *Die Gummi-Zeitung* (Dresden) says that the year witnessed a decided upward tendency in general trade, which was shared by the rubber industry in its various branches. The demand for bicycles showed a steady increase, with a corresponding demand for rubber tires and sundries. The German balata belt has lately begun to assume an important standing in the market for belting—a fact for which our contemporary claims some degree of credit. A considerable increase in the production and consumption of waterproof garments is also to be reported, several large new concerns well-equipped for their manufacture having come into existence. "The enormous future of this industry," says *Die Gummi-Zeitung*, "is hard to calculate. What a 'boom' would be created if Germany, following Japan's example, should supply waterproof coats to its entire army; if municipalities and private corporations should clothe those of their officials and subordinates who are employed out-of-doors in waterproof uniforms. That this is only a question of time is not to be doubted." Business in rubber hose, surgical goods, toys, and other sundries was exceptionally good during the year. An important event of the year was the organization of the "Association of German Rubber-Goods Manufacturers," of which the hope is expressed that its existence may be long and its beneficent influence may be felt in all branches of the trade.

"Aside from these facts," our contemporary continues, "the year 1895 has laid many a germ, many a seed of promise for a future harvest. In the first place it may be mentioned that the conclusion has been arrived at that a halt must be called in price-cutting, and the forcing of goods on the market at any cost. While the acknowledgment of a mistake is a step toward reform, it is to be hoped that the trade will go farther, and that the definite course taken by some leading firms will be followed generally, and, with sound prices reached, a solid business basis established."

Two fields, referred to as full of promise, but still in the background, are the general application of rubber tires to vehicles, and the daily growing use of electricity for purposes of light and power. The experiments conducted during the year with rubber tires for heavy vehicles have not yet been completed, but, judging from what has been learned of the results, they are very promising. "In respect to electricity, the Tesla discovery has enabled us to obtain a glimpse of the future, to the bewildering effect of which we are not yet become accustomed. Of inventions and improvements the past year was as fruitful as former years, the vulcanization by electricity being to us of especial importance; also the production of a suitable rubber-substitute and the reclaiming of rubber from scrap. Much improvement is to be made in this direction as yet. The increasing application of asbestos and celluloid to various uses must also be mentioned." Taken as a whole, *Die Gummi-Zeitung* decides that a verdict must be rendered in favor of 1895 as compared with all former years in the rubber industry in Germany.

* * *

THE latest report of the Mannheim Chamber of Commerce makes a favorable showing of the India-rubber industries of

that locality. New commercial relations have been formed by some of the manufacturers, notwithstanding that the higher import tariffs of Russia and Austria have made trade with those countries impossible in some lines of rubber. Regarding the local rubber-shoe company, it is stated that their report shows "an improvement over the previous year, although the manufacture of rubber shoes suffered considerably in the keen competition with Russian manufacturers. In general this factory has kept quite busy during the year. That the German rubber industry has not been sufficiently considered in the Russian commercial treaty is a deplorable fact." The cessation of the commercial treaty with Spain has lessened the already declining trade with that country.

It is complained by the Mannheim celluloid factory, which also does something in rubber, that a new law which went into effect during the year places an increased tax on the spirits used in the manufacture of celluloid, which is an essential part of the raw material, representing one-eighth of the entire value. This and the revised protective tariff, which may now be said to yield no protection, have created a condition which threatens the ruin of this new and flourishing Mannheim industry. Experiments are being made, however, in the hope that a substitute for the spirits now used may be found. "Our principal competitor, France," says the report, "is working under the protection of a high tariff, and is allowed to bring its overproduction to our market almost free. This, and the before mentioned tax on the spirits used in the manufacture prohibits us from competition with France, not only in the markets of the world, but in our own. The quantity of spirits used in the year 1895, in the manufacture of celluloid, was about 700,000 liters."

The waterproof-clothing manufactory at Mannheim reports unsatisfactory conditions. "Throughout a large portion of Germany the dealers do not take quality into consideration, but only low prices. In consequence, a reduction in prices has been forced by several small factories making inferior goods, making business unprofitable, this factory not being inclined to degrade the quality of its product."

A firm of rubber-goods dealers report that business with them was better with them than during 1894, especially as losses in collections were fewer. They note with satisfaction having gained new customers for rubber shoes in Russia.

* * *

THE rubber factory of Rudolph Hartung at Dresden proposes a settlement with its creditors at 40 per cent., in lieu of which they will have to go into bankruptcy. The capital is reported to have been impaired in adding some new products to their list, in order to compete with other houses, with unprofitable results.

The director of the tire department of Joseph Reithoffer's Sons (Vienna-Steyr), who visited the cycle-shows in London and Paris, returned with a collection of new tires and rims. It is his opinion that the new models of pneumatic tires are without merit, the tendency being to cheapness and, of course, inferiority.

Rubber-tired stages, to be electrically lighted, of elegant design, resembling coaches, are being constructed in a Berlin factory. It is intended that the incandescent lights shall be of such brilliancy that passengers will be able to read *en route*.

RIVERS OF THE SOUTH AMERICAN RUBBER COUNTRY.

By Hawthorne Hill.

ALMOST formidable barrier to the development of the commerce of Bolivia exists in the cataracts in the river Madeira, which forms the boundary in part between that country and Brazil. Bolivia is probably the worst land-locked state in the world, having no more direct outlet than the badly-obstructed river named, but no doubt the overcoming of this barrier would speedily augment the wealth of her people and the revenues of her government through the resulting development of the India-rubber trade alone. It is to be regretted that the projected Madeira Falls railway should have been abandoned after the making of so much progress upon it, especially since its early revival is improbable. Meanwhile, no little interest has been manifested by the public authorities and by geographers, in both Bolivia and eastern Peru, in fully exploring the many large rivers flowing through those countries into the upper part of the mighty Amazon system, one result of which has been to indicate the practicability of marketing India-rubber and other valuable forest products without recourse to the obstructed Madeira.

In articles published from time to time in THE INDIA RUBBER WORLD attention has been called to the great length and volume of the river Ucayali, the most important tributary to the upper Amazon, and in the issue of October 15, 1894, especially, was published a map of this stream and its branches. A writer in that issue said:

Already respectable centers of trade exist at the junction of the Perene with the Ene to form the Tambo, which in turn empties into the Ucayali. Here Messrs. Cardosa & Co. are established in the India-rubber trade, having some thousands of Piros and Conibos Indians collecting the gum for their trade. The firm own some small steamers which run upstream some 900 miles to Iquitos, the trip usually occupying twenty or thirty days. Their business is under the direction of an Irish gentleman named Fitzgerald, though in this Spanish-speaking country he is called Fiscarrald.

The Beni river has also been mentioned frequently in THE INDIA RUBBER WORLD as one of the sources of the Madeira, together with the numerous Bolivian and Peruvian streams which help to swell the Beni. Perhaps the most notable of these is the Madre de Dios. Recently much has been brought to light respecting the latter river and the country through which it flows, and especially the fact that its sources are so near to those of the Ucayali.

For instance, a party led by Señor Fiscarrald, above referred to, ascended the Ucayali and its tributary the Camisea, to the head of navigation in the latter. Then, crossing the ridge dividing their watershed from that of the Madre de Dios in fifty-five minutes, they found a stream navigable by large canoes which carried them quickly into the Madre de Dios. This they followed down to the Beni, and the journey could have been continued without interruption to the Madeira. Writing of this expedition, the president of the Royal Geographical Society (London) says:

Don Carlos Fermin Fiscarrald is an enterprising merchant who has established a station on the Ucayali, at the junction of the rivers Tambo and Urubamba, and employs twenty boats in collecting produce for export. His discovery of an easy and short route between the basins of

the Ucayali and the Madeira is not only of geographical interest; it will lead to great commercial results. The Madre de Dios is found to be a magnificent river without obstructions, and the region it traverses is one of the richest in the world. The slopes of the Andes yield coffee and cacao of unequalled excellence; they are the home of the best species of quinine-yielding chinchona-trees, and they abound in gold. In the lower forests there are inexhaustible supplies of India-rubber of the best quality, and many other valuable products.

The point of interest in what precedes is that Bolivian products, by being carried up the Madre de Dios, could be transferred overland to the head waters of the Ucayali in a much shorter time and at a smaller expense for labor than is now involved in the porterage of freight around the falls in the Madeira—now the only outlet for India-rubber and other products of the region watered by the Beni and its tributaries. But this is not the only opportunity for escaping the Madeira falls. In THE INDIA RUBBER WORLD of December 15, 1893, an account was given of explorations showing the ease with which freight might be conveyed overland from certain points on the Madre de Dios to the Aquiry, the principal tributary to the Purus, an affluent of the Amazon. The first rubber ever gathered on the Beni river was conveyed overland to the Mamoré and thence floated down to the Madeira, the lower Beni being then believed to be unnavigable. And to-day some rubber from the upper waters of the Beni is carried by land to the eastern terminus of a railway reaching to Mollendo, on the Pacific coast. These facts are quoted to show that transportation by land is not impracticable, and that the freer movement of freight that is possible may in time largely stimulate the supply of India-rubber in a section already noted for the excellence of its products.

As the resources of the South American republics become better understood, and their financial conditions are improved, doubtless several undertakings already suggested may be carried out. One is the above mentioned Madeira Falls railway. An alternative is the connecting of some of the streams named in this article by the construction of canals—a subject in which the Bolivian government is even now expressing an interest. Finally, among engineering enterprises which might prove of interest to the India-rubber trade, there is the Brazilian project of perfecting water communication between the Orinoco and the Amazon, for which a concession was at one time granted, but without being developed. It must be understood that in the crude-rubber trade it is not sufficient to have facilities for carrying the gum to market; an equal or greater weight of merchandise must be moved from the seaboard with which to pay for the rubber, for this trade has not yet reached a cash basis, or one in which the usual methods of commercial credits obtain. But rubber is not the only South American product of which the annual export is increasing, and an improvement in transportation facilities there will result as naturally, even if less rapidly, as they have followed the demands of business in our own country.

NOTE.—Articles previously published in THE INDIA RUBBER WORLD respecting rubber interests in the countries above referred to are:

"The 'Pará Rubber' of Bolivia and Peru," by Hawthorne Hill. September 15, 1893; "The India-rubber Industry in Amazonian Peru," by H. Guillaume, F. R. S. December 15, 1893; "The Rubber-Traders of the Ucayali Valley," by José de la Sancnez. October 15, 1894.

ANOTHER RUBBER EXPERT INTERVIEWED.

EVERY now and then, a man who has "made the study of rubber goods his chief business for years," who modestly calls himself an "expert" or a "pioneer," gets himself interviewed by some trusting reporter and oracular utterances go the rounds of the press, and, apparently, never die. This would be all right were it not for the fact that he is usually a mine of mis information. The last one to talk had his ideas aired in the *Philadelphia Item*.

One of the first points that he makes is in reply to the reporter's query regarding the disagreeable odor peculiar to rubber capes and coats. The expert explains blandly that it is because the goods have not been deodorized. He goes on to state that all the leading rubber factories in the country deodorize their goods. "The manufacturers of cheap goods, of course, don't take this trouble, and the compound which it is necessary to mix with rubber in order to make it pliable and yielding, is bound to have an odor if the garment is not so treated. A certain herb common to China, Japan, and other certain countries of the East [it is lucky that they are not uncertain countries], an herb which the Chinese in New York smoke in little sticks, as we do cigars, is used to deodorize rubber goods. Tier upon tier of finished garments are hung in air-tight apartments and subjected to the fumes of this herb or weed. After a thorough fumigation of this kind, not the slightest odor or scent can be detected."

As a matter of fact, there is no way of deodorizing India rubber except by mixing with it mechanically, something that will offset the natural rubber smell, and this must be done before the goods are vulcanized. Of course, mackintoshes even when coated with the finest rubber, if left in a close room, will have a rubber smell. That odor is not apparent however in the open air. At the same time, the rubber itself will always have a little of its own smell, which is not at all disagreeable. As for any manufacturer, or dealer having "tier upon tier of finished garments hung in air-tight apartments," (by the way, how would you hang tier upon tier of garments anyway, and if the apartments were air-tight, how long would anything burn?) it simply isn't so, the expert to the contrary notwithstanding.

In other words, the man simply did not know what he was talking about and filled the reporter full of the cheapest sort of nonsense.

Further on, he speaks of *the para*, "which is a technical name given to rubber in the trade," which is pitifully weak for a rubber man. A little further on he engages to describe the double texturing of garments, "that is the rubber compound is contrived between the outer and inner surface, although all are cemented together," which is so darkly non-descriptive that it is hardly worth contradicting.

Again, describing vulcanizers, he says that they are "huge wooden boxes covered with sheet iron on the inside and filled with steam pipes, the doors of which are hung on the top" (who, but an "expert" would think of covering anything on the inside or who but he ever heard of a steam pipe having doors?) A little further, speaking of India-rubber itself, he sins more grievously still. He says: "Everybody remembers the cream-like sap which it (the rubber tree) yields. It is hardened by the natives into big balls, like rosin, and afterwards, when *melted* and mixed with certain compounds, it is coated onto the cloth which is to be made water proof." Alas, that melting is too much. When pioneers and experts preach it how can the common herd be supposed to refrain? And now the editor of THE INDIA RUBBER WORLD will be flooded by inquiries as to the best furnace for melting rubber.

A REPORT on the trade and commerce of Switzerland shows very unsatisfactory results in the manufacture of elastic rubber goods. The benefits expected from the commercial treaty with Spain—to which country the principal exports of Swiss elastic goods used to go—were nôt realized. The manufacturers are reported to be scantily supplied with orders, and some of them have decided to allow a portion of their plants to remain idle, while others would like to retire from the business.

MR. THOS. A. BELL, formerly manager of the Star Rubber Co. (Trenton, N. J.), is at present in Winnipeg, Manitoba, where he is editing a paper called the *Northwest*. He is also in the real estate and loan business.

"PERFECTION" AIR MATTRESSES ON SHIPS.

IT has been already chronicled in THE INDIA RUBBER WORLD that the magnificent American liners the *St. Paul* and *St. Louis*, had been fitted with the best type of rubber air mattresses. Just what this means in the way of comfort, healthfulness, and convenience is not apparent from the simple statement that they are in use, and a word as to such goods is eminently in order.

To begin with at sea a moisture resisting mattress is really invaluable. Then too an air mattress in time of danger is a most efficient life preserver. One of ordinary size will easily support a ton when immersed in the water. Beyond this as it conforms to the body better even than down, and is free from the heating qualities of the latter, it forms the most restful couch possible. In rough weather the air cushion lessens the shock and jar of the waves, just as the pneumatic tire lessens the roughness of the road. With the rubber article the moistures of the body are never absorbed, as in the case of hair mattresses, and it is acknowledged that it is by far the most hygienic of all beds. As the rubber surface is covered by a light tick which is easily removed for washing, absolute cleanliness is made easy, and the presence of vermin rendered next to impossible. These mattresses may be inflated to any degree of elasticity or rigidity, and when the bed is "made up" it needs no shaking nor turning as it contains only pure air. The mattresses by a simple system of stays are so made that the air is evenly distributed through all parts, no matter where the weight may be applied. The illustration shows a steward inflating a mattress on the *St. Paul*. As will be seen the process is simple, and as easily adapted to the ordinary intelligence as is the inflation of a pneumatic tire. It is to be hoped for the sake of the traveling public, that the time will come when all of the better class steamships, sleeping cars, and hotels will be fitted with such goods as a matter of course, not to speak of the need of such goods in hospitals, homes, and indeed wherever one wooes "nature's sweet restorer." The "Perfection" is manufactured by the Mechanical Manufacturing Co., No. 146 Franklin street, Boston.

NEW GOODS AND SPECIALTIES.

IN a certain office in Boston where a great deal of draughting is done they have a paper weight designed by one of the draftsmen which is well worth copying. It is simply a block of lead about which is vulcanized a heavy coating of pure gum. The metal is entirely covered and the weight has these advantages, it holds the paper firmly with no possibility of slipping; it does not dent or mark the finest surface, and if it happens to drop upon the floor the nervous individual in the room below is not betrayed into certain and calamitous profanity.

TILLINGHAST TIRE-WELDER.

THE illustration shows a simple, economical and serviceable vulcanizer for tire repairing, which is the invention of the well-known tire expert, Pardon W. Tillinghast. What is claimed for the vulcanizer is that, besides being compact and reliable, it is endorsed by the leading tire manufacturers, that it cannot over-heat, and has a new style of regulator, with no thermometer, which makes the apparatus automatic. The dies for curing are set over the top of the heater, and are heated by contact with it, and also by the hot air from the flame. All parts are made of iron, cast in one piece. In use it takes about five minutes to heat it up, and repairs are easily vulcanized in ten minutes. It is not only used for tire repairs, but can be used for vulcanizing anything made of rubber. Two dies are furnished with the machine, one for repairing the tire when on the rim; and one for repairing when the tire is flat. In addition to this the furnishings include uncured rubber, patching material, and the Tillinghast repair tool for single and double tube tires. The vulcanizer uses about one foot of gas per hour. Manufactured by the Cycle Invention Co., Providence, R. I.

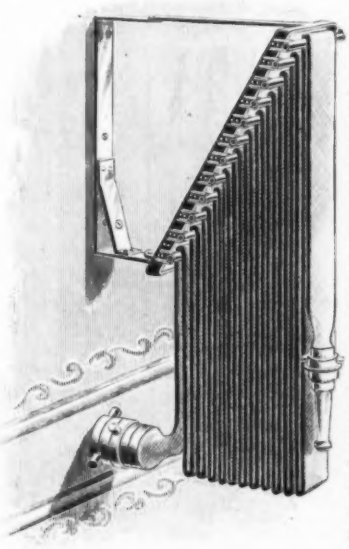
TWO TYRIAN NOVELTIES.

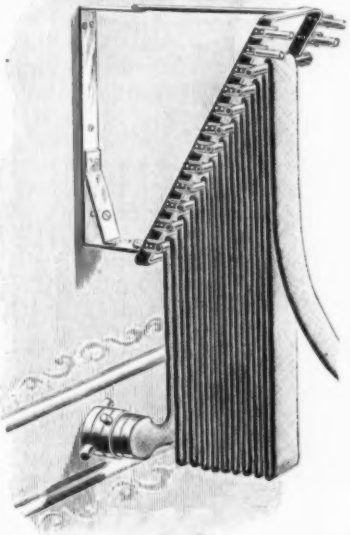
THE Babies' Content Teething Ring is simply a white bone ring and guard, at the end of which is firmly affixed a rubber nipple. These goods are put up one dozen on a card. Manufactured by the Tyer Rubber Co., Andover, Mass.

THE Imperial Pencil Band, is a neat bit of molded rubber, for which a patent was recently granted, designed to fit over the head of a pencil or stylographic pen to keep it from slipping out of the pocket. As shown in the cut it is made with projections that are at right angles to the pencil. A secondary virtue that it possesses is to keep the pen or pencil from rolling off the table or desk when laid down carelessly. They are put up on neat cards holding three dozen each.

A NEW HOSE-REEL.

HOSE REELS for public buildings and for factory use have been of infinite variety, and heretofore have not been unqualified successes. What is wanted in a reel is something that will hold the hose without getting it out of shape, and at the same time will have it in constant readiness for use in case of fire. The reel shown in the illustrations is the invention of B. L. Stowe, who has probably done as much to further perfect fire equipment as has any man in the United States. The reel is exceedingly simple, and consists of a series of short rods hung longitudinally in a frame. These rods are so arranged that they maintain their natural horizontal position, and thus support the hose in festoons until a slight pull on one end of the hose causes them to quietly drop out of sight and allow the hose to run out in a straight line. The apparatus works very smoothly, is something that it seems impossible to get out of order, and is so simple that it needs no explanation at all. It is already having a fine sale. Manufactured by the Eureka Fire Hose Co., New York.





THE ALDRICH FORCE PUMP.

A NEW type of force pump for plumbers and for house use is known as the Aldrich Force Pump. It is claimed that it is altogether the latest and best invention for opening and cleansing waste pipes from lint, woolen and all foreign substances lodged therein, and by its frequent use the accumulation of decayed animal or vegetable matter in sinks, house basins, baths, &c., may be prevented and protection insured from the germs of disease in the air we breathe. It is simple, cannot get out of order and will last a life time. To use, the pump is placed in position over the waste pipe and the handle drawn up until the plunger is raised above the holes in the side of the barrel,

then forced down and the operation repeated until the obstruction is removed. The pump is made of rubber and metal and sells for $3. Manufactured by the New England Co-operative Development Co., 35 Hanover street, Boston.

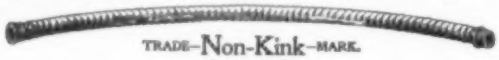
KOHLER'S QUICK-FIT WOODEN HOSE-NOZZLE.

PROBABLY what is the simplest and cheapest hose-nozzle ever brought out is shown in the illustration. It is made of wood, and is of the same type of goods as the "Little Wonder Hose Mender,' which had so large a sale. This nozzle needs no bands or couplings to hold it in place, and can be fitted to a garden hose by anybody. They are so exceedingly cheap that

a sample dozen, postpaid, costs but 35 cents. Application for the patent for this is already on file. Manufactured by F. E. Kohler & Co., Canton, Ohio.

NON-KINKABLE ATTACHMENT.

A DEAL of difficulty has been experienced in the past in garden-hose because of its kinking and breaking near the point of attachment. In order to overcome this, a very simple arrangement is shown in the accompanying illustration. This is nothing more than a section of hose, 2½ feet in length, made



4-ply, with coiled wire embedded in its walls. This is put between the end of the section of hose and the water supply. While it is thoroughly flexible, it is impossible to kink it and shut off the water, or to form a bend that will develop a break. The illustration shows very plainly the method of attaching and its use. Manufactured by the New York Belting and Packing Co., Limited, New York.

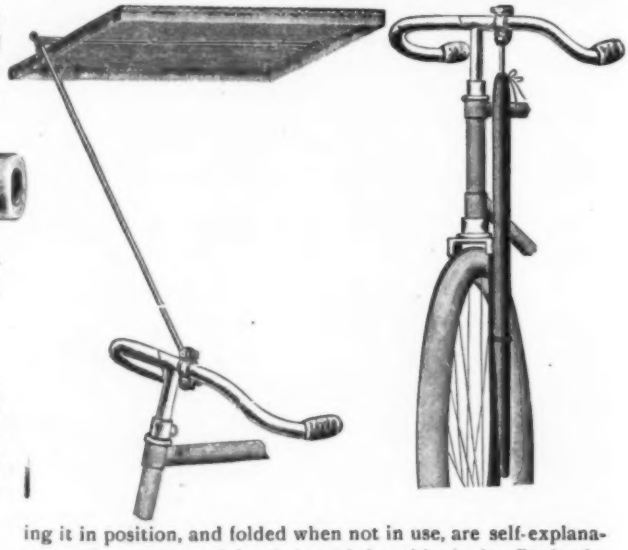
KOENIG'S SAFETY RESPIRATOR.

AN apparatus that is largely made of India-rubber and that is used very much as the diving suit is used except that it has

nothing to do with submarine work, is the Safety Respirator. The wearer of this suit is enabled to go into the midst of smoke or noxious gases, and work for any time with perfect safety, a supply of pure air being continually forced in through the hose that connects with the outer world. These suits are already in use in chemical works, gas works, aboard ship, and to a certain extent in fire departments. The illustration shows a fireman equipped with one of these, working in the hold of a vessel where it would be impossible for a man to live without some such protection. Manufactured by Arnemann & Torchiani, 43 Centre street, New York.

THE CYCLE SHADE.

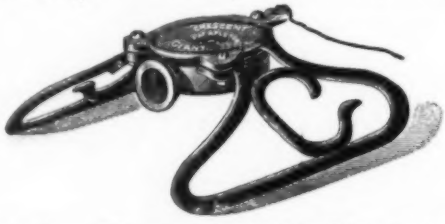
THIS neat little canopy finds its place in THE INDIA RUBBER WORLD because it is made of rubber. The illustrations show-



ing it in position, and folded when not in use, are self-explanatory. As a matter of fact it is said that this shade affords the rider complete protection from the sun, and is also useful in a sudden shower. It offers no resistance to the wind, being perfectly flat and cuts the air regardless of the position in which it is adjusted. Manufactured by Schmid Bros. Manufacturing Co., 215 S. Clinton street, Chicago.

THE CRESCENT GIANT SPRINKLER.

THE illustration shows a simple, effective and cheap lawn sprinkler known as the "Crescent Giant." It is made entirely of cast iron and finished in bright vermillion and japan. It has no revolving parts and a free channel for water, making it im-



possible to clog. The water is distributed in a perfect circle, covering a radius of 36 to 48 feet. Manufactured by the Crescent Brass & Iron Works, Detroit, Mich.

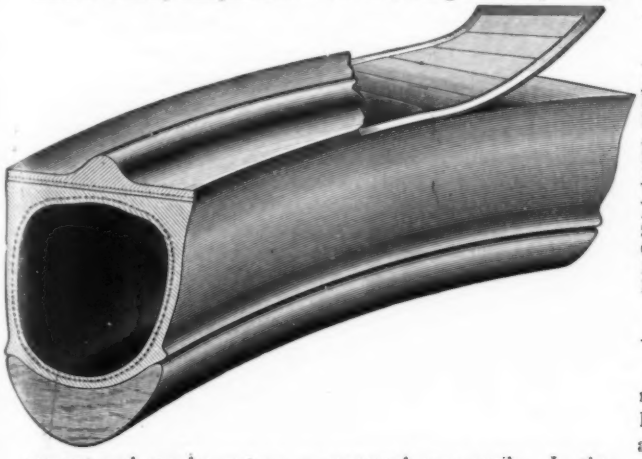
THE GRAPPLER PNEUMATIC TIRE.

ANOTHER form of attachment for rubber tires, in this case a pneumatic tire, is what is known as the Grappler. This principle is especially adapted to carriage wheels and it is claimed that the tire is the most easily detachable of any on the market. The method is so simple that it does not require the removal of the inside shoeing of the ordinary carriage wheel. The rim being in grooved section, which clamps on securely to the felloe, will go around the outside of the ordinary wheel, being held in place by one detachable screw which makes it perfectly rigid and secure. Should a puncture occur the cover can

be instantly removed, the inner tube repaired, or if necessary both tire and rim can be removed leaving the wheel perfectly intact, which cannot be done with any other tire. Manufactured by the Grappler Pneumatic Tire Co., Ltd., 27 Clare street, Dublin, or Columbia Rubber Works Co., 66 Reade street, New York.

THE W. P. ARMORED TIRE.

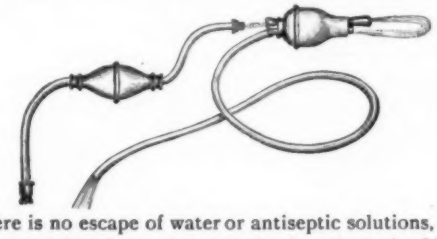
THIS is a single tube tire and in its construction is decidedly unique. In the first place when the tire is inflated it has a flat tread, and an elastic non-puncturable rubber band inside of which are vulcanized thin strips of specially prepared watch-spring steel one-quarter of an inch wide, and five one-hundredths of an inch thick, which run transversely with the band. Each piece of steel acts independently of the other, thereby leaving the band fully as elastic as though no steel had been used. This band is entirely independent of the tire, being held in place by



cement and can be put on or removed very easily. In the center of the band and on the tread surface, there is a raised ridge of rubber one half-inch in width and three-sixteenths of an inch in thickness, thereby making the maximum tread surface of hard roads only one half inch. It is further claimed for this tire that it will ride in snow, sand, or mud, when none other can; that it will run out of rut holes as easily as into them; and that it will climb a grade of sand or gravel which no regular pneumatic can. The makers also claim that it is the fastest tire on earth. Manufactured by W. P. Armored Tire Co., 24 Erie street, Buffalo, N. Y.

THE LUTZ REFLOW BULB SYRINGE.

THE novelty in this syringe is the conical bulb with two hard rubber pipes running through it, for the purpose of induction or eduction of water or other fluids. By the use of this



bulb there is no escape of water or antiseptic solutions, making it most convenient for patients confined to the bed. Manufactured by the Capitol Syringe Co., Indianapolis, Ind.

THE Enterprise Rubber Co. (Boston) will handle the New Brunswick Rubber Co.'s tires in New England this year.

THE INDIA-RUBBER CROP OF LAGOS.

RETURNS have come to hand from Lagos which substantiate the reports already published in THE INDIA RUBBER WORLD respecting the remarkable development of the crude-rubber industry, so recently introduced in that West African colony. It has been unprecedented in the history of the rubber trade, for within a single year from the first recorded exports Lagos has taken rank as one of the largest exporters of rubber in the world—second, in fact, only to Pará. A short time ago some figures were printed in this journal showing the increase in rubber shipments from the port of Lagos during the first half of 1895. Through the courtesy of her Majesty's acting collector of customs at Lagos, Reginald R. Gace, Esq., it is now possible to complete the record for the year—the first in the history of India-rubber in Lagos—as follows:

MONTHS.	Pounds.	Value.	Average Value.
January, 1895	12,131	£ 1,213 10 3	£ 0 2 0
February	15,888	777 0 11	0 0 11⅝
March	26,316	1,419 7 8	0 1 1
April	39,763	2,078 16 6	0 1 0½
May	216,916	11,700 0 7	0 1 1
June	268,619	12,577 2 6	0 0 11½
July	461,765	22,593 13 3	0 0 11⅝
August	354,990	19,951 18 3	0 1 1½
September	673,160	36,172 19 9	0 1 1
October	1,059,158	57,117 1 10	0 1 1
November	983,394	52,802 13 0	0 1 1
December	948,404	51,488 9 4	0 1 1
Total, 1895	5,060,504	£ 269,892 13 10	£ 0 1 0½

The Gold Coast Colony had previously been regarded as a notable example of rapid development in rubber production. But the export from that colony, though beginning in 1883, amounted only to 3,395,990 pounds in the calendar year 1893, according to the latest official figures received by THE INDIA RUBBER WORLD from Accra.

Samples of Lagos rubber began to reach the United States shortly after the first receipts from that colony in Europe, and of late there have been considerable receipts of it at New York, but inquiries in the trade bring out the fact that American manufacturers have as yet treated the new rubber with caution. Considerable time is always required for a new product of rubber to become known to the manufacturing trade and to establish a reputation. Lagos rubber has been used in English factories, however, and to some extent in Germany and Austria. Up to date the total product from Lagos has been shipped direct to Liverpool, where the quotations lately have been 1/3½@ 1/10½. It is asserted in New York that Lagos rubber is good, and that it has been improved since it first began to arrive. It is classified as "oysters," "strips," and "buttons."

Whether the heavy production in this little English colony will be long maintained is a problem on which no one seems prepared to express an opinion. The output of Accra and Benguella rubbers is not as large to-day as in some past years. Then it is remembered that at one time Mozambique and Madagascar grades came forward in surprising qualities, but fell off in a short time, when the supplies near the coast had become exhausted. It is considered probable that the same thing will prove true of Lagos rubber, even if there should be enough rubber trees back of the coast to yield a permanent supply in smaller quantities. Already advices have been received of smaller receipts at the Lagos coast since January than during the preceding months. There are no water-courses in Lagos, as in the Congo country, to facilitate the collection of rubber at points distant from the seaboard.

CONDITION OF THE RUBBER TRADE IN CHICAGO.

Special Correspondence of "The India Rubber World."

THE trade in rubber goods in Chicago has grown enormously during the last ten years. The influences which have operated to make this an important rubber center are, for the most part, the same which account for the wonderful development of the city in other respects—such as location, extent and character of the surrounding population, and the enterprise of the citizens. While no one in the rubber trade is willing to state specifically the rate of growth in his own particular line, there is a manifest heartiness and sincerity in the statements that the increase is steady, continuous, and rapid. The development of other trade centers farther west, instead of in any way retarding Chicago's growth as a rubber market, has seemed to stimulate it.

An attempt has been made to obtain the views of some of the leading rubber-men of Chicago on topics of general as well as local interest to the trade. It is a pleasure to state that every one seemed glad to favor THE INDIA RUBBER WORLD with such information as was sought, and pleased to see the effort to give publicity to western ideas and feelings.

Every important rubber concern in the country naturally has an active agency in Chicago. All the agencies visited speak well of the present condition and future prospects of trade. To some of the leading questions submitted, the answers were so similar in every substantial point that no reference to individuals is necessary.

One of the questions asked was what were the normal limits to the territory whose trade is tributary to Chicago, and the answer generally was: the entire west and southwest. There is no other western city which takes care of the needs of the immense population in these states, although St. Louis is acknowledged to be a good rubber market. Of course St. Paul, Omaha, and Minneapolis have each a good and well-established rubber trade, but these cities cover the trade only of comparatively small sections of territory, while Chicago is the center of the west and southwest. Merchants do not stop on the way, but come to do business to Chicago, and they come from Oregon, Arizona, Utah, Washington, Colorado, Montana, Kansas, Nebraska, the Dakotas, and the rest of the list of western and southwestern states.

On the latter point a prominent member of the trade, who did not wish to have his name used, expressed himself as follows to an INDIA RUBBER WORLD man:

"It is self-evident that the development of other rubber markets in the west must, in a sense, have taken away some of the business that would otherwise have come to Chicago. Competition is becoming greater and keener all the time, and the considerable sections of territory supplied respectively by St. Louis, St. Paul, Milwaukee, Omaha, Portland, and other cities, are taken out of the territory over which Chicago claims jurisdiction. But the right view to take is that the development of those markets has been concomitant with the development of Chicago and equally natural. Chicago could not have expected to monopolize the trade, and has not been disappointed. But she has not directly felt the effects of the competition, because her own trade has steadily grown and continues to grow. She does not look upon the other cities as rivals at all. She has retained her superior position and is certain to retain it in the future."

The writer called on Mr. John H. Brown, the manager of the Western branch of the Gutta Percha and Rubber Manufacturing Co. Mr. Brown has just moved his store from No. 170 to Nos. 96-98 Lake street, and now has the finest and most attractive rubber store in Chicago. It is in the Commercial Hotel building, and traveling men will remember the old Commercial Hotel, which was one of the favorite resorts of sales-agents and commercial travelers. The store is very large and well lighted, with a frontage of 40 feet on Lake and 130 feet on Dearborn street. The Chicago agency was established about twelve years ago, and Mr. Brown says that it did a profitable business from the very first. There has been a steady increase in the amount of business done. Several traveling men are employed by this branch, and the number of employés in the store and offices is considerable, and about to be increased.

The outlook, according to Mr. Brown, is at present very bright in the rubber trade. There has been a great improvement since last year and all traces of the panic and business depression may be said to have disappeared. No special line is particularly active, save possibly small hose. The weather has so far been very favorable to the sale of small hose. The railway branch of the trade has, as usual, its ups and downs, but there has been a perceptible increase in the business of railway rubber specialties. In spite of the insolvency of so many of the western lines, and the numerous receiverships, no bills are paid more promptly than railroad bills, and their trade is particularly desirable. For elevator belting, packing, and mechanical rubber generally, the demand has been active, but there has been no great or special increase of late.

The only cloud on the horizon, said Mr. Brown, is the uncertainty in the political situation. The jugglery in congress on the financial and tariff questions threatens to interfere with the steady improvement of business. The Dingley revenue bill he thinks should have been passed without delay or political fooling. If the government continues to run into debt, it may be impossible to avert another financial disturbance which would disastrously affect business. The Cuba war cloud and the recent Venezuela war-scare have not directly injured the rubber trade, but, by unsettling business generally, have tended to introduce some uncertainty. If congress should only cease blundering and playing politics, the prospects in the trade would be very bright indeed. Collections—a fair index of the

situation—have been very fair, said Mr. Brown, and no complaint can be entered on that score except against individual dealers here and there.

The Chicago Rubber Works of the Mechanical Rubber Co. are the only concern in the trade having a factory here. They are on the corner of Grand avenue and Rockwell street. They report business as very fair and collections as good. The tariff agitation and financial uncertainty have not, in their opinion, injured the rubber business much, although all traveling men report very conservative buying and a general tendency to do business on an economical basis. The improvement since last year has not been as great as could be wished, and the outlook is only fair. The weather has so far been very favorable, the but rainy season may interfere with the sales of garden-hose. The railway demand has been, perhaps, somewhat lighter than usual at this season, but there has been no marked decrease. The company, however, carry the usual amount of stock in every line, believing in the policy of being always prepared for the prompt filling of orders. In the opinion of the company, the west consumes less rubber goods than the east, owing to the greater density of the population of the eastern states. There is no doubt, however, that Chicago is second only to New York, in importance as a rubber center, and that the trade here is constantly growing. There are large jobbing houses in St. Louis, and they sell an immense quantity of goods; St. Paul is found to be a good market in belting, and all this intensifies competition.

Mr. E. G. Stearns, of E. G. Stearns & Co., selling-agents for the American Rubber Co. and The L. Candee & Co., kindly consented to go over the situation in the boot and shoe and mackintosh lines. They employ a large number of traveling men and do an immense business throughout the west and southwest.

In reply to a general question, Mr. Stearns said that in the boot and shoe line the western houses doubtless distribute and sell 60 per cent. of the entire output. Chicago is considered the greatest market in that line. St. Louis is a serious competitor in the line of lighter goods. The company find it convenient to have a warehouse in Omaha for the far western trade. The increase in the sales of boots, shoes, and mackintoshes by the company has been phenomenal, doubling in the past two or three years. This has been due to general rather than special local causes. A few years ago, said Mr. Stearns, the mackintosh was a new thing on the market, and people have but lately come to use it as a wrap, apart from its waterproof qualities.

In general, things at present are rather quiet, thought Mr. Stearns. The weather has not been specially favorable to the boot and shoe business, and there is great conservatism in buying. He reports very remarkable activity in that line in the Colorado section. The mining boom in Cripple Creek and other localities has been of great advantage to the rubber trade, but Colorado is only a small section of the territory covered by Stearns & Co., and outside of it there is no great activity. There is, however, one exception—the mackintosh branch. Mr. Stearns says that he has found it impossible to fill his orders, and is many thousand garments behind. This shows that the sale of mackintoshes no longer depends exclusively on the weather, for there has been a mild, open winter here.

Owing to the late hard times, Messrs. Stearns & Co. have carried but a limited stock, and as production has also been curtailed, it is now difficult to get prompt service in specially active lines. The situation has somewhat improved, but Mr. Stearns is confident that, but for congressional incapacity, business would now be a great deal better than it is. The Venezuela message, said Mr. Stearns, has been a source of great disturbance to the rubber trade, while the financial embarrassments of the government are having a bad effect on the small bankers and dealers in the cities and towns of the great west. It is difficult to obtain loans even on the best collateral, and this tells in collections. Collections are not good, and for no other reason than the monetary stringency. This same cause, too, prevents more liberal buying. Apart from disturbing political factors, the outlook would be rather encouraging. Messrs. Stearns & Co. employ a large number of men in their warehouse and fine, large store on Madison street.

A call on W. H. Salisbury & Co., western selling agents of the Boston Belting Co., the Jewell Belting Co., and the Eureka Fire Hose Co., resulted in a most profitable talk, Mr. Salisbury kindly consenting to review the situation from his point of view, which is somewhat exceptional, as his agency does not come in contact with the small merchants and dealers at all, but with the larger and more important consumers. The firm have branches in Omaha, Grand Rapids, Denver, Detroit, Salt Lake City, and Helena. They also have a resident agent in Mexico. They cover the entire west and southwest.

When asked whether there has been a material improvement since the panic year, Mr. Salisbury said: "Yes, there has been a considerable improvement. But to say that this year is better than last year, or better than 1893, is to say very little, since everybody knows how lean and depressed those years were. The fact is that our business this year equals, if it does not surpass, that of the very phenomenal year 1892. The greatest activity is in the mechanical rubber goods. Most of our efforts are concentrated on that department of the trade, although we do not neglect other lines. We find a tendency to buy, and a hopeful view of the future. Instead of the hand-to mouth business of the years 1893–94, we find a general disposition to do business on the right scale. Collections have, with us, been exceptionally good."

Mr. Salisbury explained that a good deal of their business is with the railroads—excellent customers and the very best of debtors, as they always pay promptly. They handle only high grades of goods, and only the largest and soundest manufacturers and consumers can afford to deal with them on a practically cash basis. Their mining trade is very large, and the mining companies are well-prepared to pay without difficulty.

In regard to the position of Chicago in the trade, Mr. Salisbury expressed himself as follows: "I should think that, as a distributing point, Chicago is superior to New York, at least so far as the mechanical branch is con-

cerned. You see, the railroad center of the country is Chicago, and not New York, nor St. Louis, or any other city, and of the mechanical trade, the railway demand constitutes the most important factor. Then, too, Chicago is rapidly becoming a manufacturing center. You will find, in support of this statement regarding Chicago's supremacy, that almost every mechanical rubber concern not only has an active agency here, but sends its stock here. As for the development of other trade centers farther west, that has not interfered with Chicago. For our own part, we now do a greater far-off business than ever before, and we expect a steady increase of the same."

The weather has not interfered with their business, said Mr. Salisbury, for, if it is unfavorable to one line of goods, their men push other lines. The rubber trade is now so extensive that every kind of weather demands a certain supply of rubber goods. In regard to the effect of the political situation on the trade, Mr. Salisbury did not hesitate to say that congressional meddling was highly detrimental. Politics, he remarked, has come to be regarded as a disturbing element. It upsets everything and plays havoc with the normal course of things. The Venezuelan and Cuban war-scares, however, have not, apparently, injured the rubber trade, chiefly for the reason that business men have made up their minds to pay as little attention to politics as possible and do not expect any serious trouble.

Messrs. Salisbury & Co. do a retail trade also, but that is incidental; they do not advertise for it and make no special efforts to extend it, devoting themselves largely to "big game."

A number of other rubber-men substantially agreed with what has been stated on the authority of the gentlemen referred to. There is a widespread belief that business ought to be even better than it is, and that the conservatism and inertia due to the late depression alone stand in the way. Legislation alone can check the healthy movement.

The writer saw a number of agencies dealing in rubber sundries, and while several of them did not care to talk for publication, the general impression was conveyed that business has not quite recovered from the effects of the hard times, and that the outlook depends greatly on the congressional situation. What with war-scares, revenue deficiencies, bond issues, and tariff and silver agitation, orders and collections cannot but suffer.

It seems proper to mention the courteous welcome and kind expressions with which THE INDIA RUBBER WORLD correspondent has everywhere been treated. To mention the name of the paper proved an open sesame to a pleasant and instructive talk, as well as to a kind invitation to come again and freely apply for any information desired. The readers of THE WORLD may expect later some notes on other houses in the trade in Chicago.

CHANGES IN THE NEW YORK RUBBER DISTRICT.

ON the first of May the New York Belting and Packing Co., Limited, will remove from Park row—on which street they have been located for thirty-eight years—to No. 25 Park place, west of Church street, and near an important station on the Sixth-avenue Elevated railway. Their new place of business extends back to Murray street, where it may be entered from No. 22, and will include the ground floor, basement, and sub basement. The immediate cause for removal is the fact that the present site of the company's business is to be included in that of a mammoth new office-building with a frontage of 106 feet on Park row, with an L opening on Ann street. Having been so long identified with this particular section of the city, the company are desirous of not going farther away than necessary, and the store selected for their new headquarters happens to be the most desirable one now available. Incidentally they have been fortunate in securing about twice the amount of floor-space now occupied, or 40 × 150 feet on the three floors. Besides, on account of the store to which they are removing having been designed especially for a former great dry-goods firm, the basement is exceptionally well lighted, probably being unsurpassed in this respect in any building in the city.

The New York Belting and Packing Co. complete this year a half-century of history, having been formed in 1846 at No. 98 Broadway. In 1856 the company became a corporation, with headquarters at No. 6 Dey street. Two years later they removed to Nos. 37-38 Park row, as tenants of the late Orlando B. Potter, where they remained until driven out by fire on January 31, 1882, after which the present Potter building was erected on the site. The amount of insurance collected by the company on their stock was $104,000. Their next location was Nos. 13-15 Park row, now about to be vacated for the reason above stated. In 1891 the style of the company was changed to the New York Belting and Packing Co, Limited.

The career of this concern has been an exceptionally successful one. Beginning about the time that the India-rubber industry took definite shape as one worthy the attention of the possessors of ability and of capital, the history of its progress has been practically that of the industry as a whole. The leader and pioneer in many features of the trade, the company have never been second to any other in any feature of the rubber industry to which they have devoted their attention. No rubber works in the world have produced a greater variety of goods; the reputation of their goods has always been the highest, and their connections worldwide. From a small beginning, their business has grown until it embraces the output of three large factories, favorably located, representing the latest improvements in machinery and methods, and producing everything in the line of mechanical rubber goods.

The business was founded by Mr. John H. Cheever, who is now the president of the company, with L. K. McClymonds, vice-president and general-manager; William T. Baird, secretary; and George W. Blanchard, general factory-manager. Up to 1891, however, Mr. Cheever's position in the company was that of treasurer. In 1856 the office of president was filled by William Judson, who, by the way, became interested in the India-rubber industry while Charles Goodyear's patent attorney. He was succeeded by the late Henry F. Durant, part of whose wealth, amassed in this industry, was used in the foundation of Wellesley College. Upon the death of Mr. Durant the presidency was filled by his widow, until the reorganization as the New York Belting and Packing Co., Limited, when Mr. Cheever became president, as above stated.

In the same building on Park row are the offices of the Me-

chanical Rubber Co., of which L. K. McClymonds is the manager, which will be removed on May 1 to No. 18 Murray street. Other offices also located there are those of The Okonite Co., Limited, the new location of which has not been decided upon, and the Fabric Fire Hose Co., which are to be removed to No. 68 Murray street. The Park-row building, by the way, has been owned up to date by the New York Belting and Packing Co.

* * *

THE Boston Belting Co. have removed their New York branch-house to Nos. 100-102 Reade street, which is now one of the best-appointed stores occupied by any rubber business in the city. The ground floor of this building has a frontage of 50 feet and a depth of 70 feet, with excellent light from the rear as well as in front. Toward the rear the offices are suitably partitioned off—a general office for bookkeeping and correspondence, private office for the manager, and the office of the shipping department. The two sides of the store are covered with shelving, for packing, gaskets, and the smaller articles kept in stock. Two rows of wide tables extend down the floor—one on either side of the row of iron columns supporting the ceiling in the middle of the store—and on these is piled an assortment of hose, while the spaces on the floor under the tables are devoted to belting. In addition to the ground floor, the company occupy the basement and sub-basement, each having the same area as the store above, besides extending under the sidewalk. The basement is occupied as a stock-room and packing department; the ceiling is high, and the light is as good as in most stores above ground, on account of the liberal use of glass in the sidewalk. Any extra amount of stock in any department is stored in the sub-basement. As heretofore, the company will handle no goods but their own products. The management of the branch-house remains unchanged, except that an addition to the staff of employés has been made necessary by the growth of the company's business. The wide frontage of the new store has afforded an opportunity for ornamentation not possible in the old location. Thus the elaborate trade-mark of the company has been painted in colors on one of the large plate-glass windows, the design being four feet in height. It may be added that the interior of the store has been finished handsomely in black walnut, and that the electric-lighting installation is as complete as in any store in New York. Among other desirable features not found in the old store is a steam elevator for hoisting goods.

The Boston Belting Co. have been represented in New York since 1870, in which year they first established a branch-house here. The most desirable location then to be obtained, all things considered, was at No. 70 Reade street, where they remained until compelled, in 1886, to seek more extensive quarters. They removed in that year to No. 100 Chambers street, which location they left last month for the same reason which took them from Reade street ten years before—the necessity for more room and increased conveniences. B. F. Eison, the New York manager of the company, has been connected with their business in this city since 1887.

* * *

THE Home Rubber Co. (Trenton, N. J.) will, on May 1, remove from No. 253 Broadway, where their New York offices have been located heretofore, to Nos. 80 82 Reade street. The first floor will be occupied by the offices of the company, and the top floor for the storage of the line of mechanical rubber goods manufactured by the company. The two intermediate floors will be occupied by the World Manufacturing Co.—a new concern in the bicycle trade.

* * *

THE recent additions to the scope of the Enterprise Rubber Co. (Boston), together with the growing volume of their New York business, have determined them to remove from No. 168 Church street to more commodious accommodations. They have therefore leased the De Raismes building, at No. 111 Reade street (just east of West Broadway), and are now in the midst of the work of removal. This work will be completed with the transfer of the offices, on or about May 1. The Enterprise Rubber Co. are jobbers of rubber shoes, making a specialty of the Candee goods. Of late they have acquired the business of the Sterling Rubber Co., which they will continue, the manufacture of clothing to be conducted in connection with their other business at the new address above given.

* * *

READE STREET AS A RUBBER CENTER.

READE street recently has become so important a center of the rubber-trade—which has followed the course of most other important lines of business in New York in becoming grouped in a particular district—as to merit more than passing notice. In an article published last month on the career of a well-known rubber-man, mention was made of the location of the rubber business in New York forty years ago, at which time most of the houses were to be found south of Fulton street and east of Broadway, a few on the opposite side of Broadway, and three or four on the lower end of that thoroughfare. The rubber district has gradually advanced northward until a larger number of important concerns in the trade are now represented in Reade than in any other street in the city, and most of them within the limit of two blocks, just west of Broadway.

The first important representation of the rubber trade in Reade street was in the line of footwear, and the locality was chosen probably without any particular reason beyond the availability of the store. For several years Cortlandt street was regarded as the center of the leather shoe trade. Later it had moved up to Murray, Warren, and Chambers streets, when two or three of the big rubber shoe companies opened offices in Reade street. Since that time Duane street—immediately north of Reade—has become the center of the leather-shoe trade, and the close relation which rubber footwear bears to that trade has rendered Reade street a most desirable location for the firms handling rubbers. At one time or another, every rubber-shoe company represented in New York has had its agency located in Reade street, and for three years past the general offices of the United States Rubber Co.—including the head of the selling department of that mammoth concern—have been established there. The opinion seems to prevail that not only is proximity to the leather-shoe stores desirable, but it is better for a rubber-shoe house to be located in the same district with other houses in the trade than to be isolated.

The Boston Rubber Shoe Co. have been established at No. 70 Reade street since May 1, 1880, which entitles theirs to be called the oldest rubber house in the street. They have maintained a house in New York since May 1, 1872, when H. S. Randall, who is still their manager in this city, opened an office at No. 4 Warren street, going thence successively to No. 18 and No. 30 Warren, and finally, in 1880, to Reade street. Previously the company had been represented in New York by Henry Elliott, in the leather-shoe trade, and afterward of the firm of Wallace, Elliott & Co., large shoe jobbers. About 1879 the later firm moved up to Duane street, and gradually other dealers followed until Duane had become the center of the shoe district. On removing to Reade street Mr. Randall found already established there the selling-agency of the Woonsocket Rubber Co., under the management of Walter S. Ballou, at the corner of Church street. The Woonsocket com-

pany continued to be represented somewhere in the street until the organization of the United States Rubber Co. rendered it no longer necessary for them to maintain a separate representation in the city. Soon after Mr. Randall's coming, the Meyer Rubber Co. opened a selling-agency next door to him, with which the agency of the New Jersey Rubber Co. was sometimes connected, under the management of W. H. Breeden.

The representation in New York of the rubber-shoe companies has undergone no end of changes. One which may be mentioned specially was the organization of the Rubber Boot and Shoe Selling Co., which existed for one year from April 1, 1886, and occupied the building Nos. 70-72 Reade street and Nos. 112-114 Duane street. The shoe concerns represented were the Boston Rubber Shoe Co., The L. Candee & Co., Woonsocket Rubber Co., Goodyear's Metallic Rubber Shoe Co., and the Hayward Rubber Co. The officers of the selling company were E. S. Converse, president; Joseph Banigan, vice-president and executive director; C. C. Converse, treasurer; and George A. Lewis, secretary. Afterward the separate representation of the companies was resumed until the formation of the United States Rubber Co. With the coming of the general offices of the latter into Reade street, in 1893, the stores in that street of the American, Wales-Goodyear, New Brunswick, and Manhattan companies were closed. The Boston Rubber Shoe Co., not being included in the combination, retained their store, and William Morse, who had been the American Rubber Co.'s New York agent, organized the firm of William Morse & Co., jobbers in rubber goods, first at No. 78 and now at No. 72 Reade street.

Of course the mechanical-rubber houses, having no connection with the shoe trade, are independent of the considerations of locality above mentioned. Yet many houses in this line have been opened in Reade street. Probably the first mechanical-rubber house in that thoroughfare found its way there for no other reason than that it was in the line of progress to get "up-town." Once there, the rubber-men found the street well suited to their purposes, and not only have they remained, but their number has been steadily increased. In this department of the trade opinion is divided as to the desirability of concentrating the business in a small district, some regarding this as advantageous, while others insist that a house with an established reputation for its goods and business methods will retain its customers and gain new ones, regardless of its location with respect to competing houses.

One consideration appealing alike to shoe-men and the mechanical-goods trade is that the district between Broadway and the North river, within two or three blocks of Reade street, north or south, is peculiarly well located in respect to transportation facilities. Houses in this district are convenient to the freight depots of the great railways which terminate on the shore of North river, and also of the New York Central and affiliated roads, together with the piers of the lines of boats running to Boston and intermediate points. Stores here are also easy of access by means of the Broadway and Elevated railway lines, and to passengers crossing the North river. Outside of these general considerations, the choice of a store is determined by the desirability of the premises available—as to space, convenience of interior arrangement, light, and terms of rental. Reade street is regarded as desirable by some persons owing to the absence of street-car lines, permitting wagons to stand before a store for loading and unloading as long as desired, whereas, on such a street as Chambers, blockades are of almost continual occurrence in a busy season, through the street-cars coming in contact with the wagons. Formerly the mechanical-goods houses did a considerable retail trade, and in the choice of a location a much-traveled thoroughfare was preferred, but this is no longer a consideration in selecting a store in this line of business.

The Columbia Rubber Works Co., doing a commission business, established in Chambers street, removed in 1882 to No. 102 Reade, and in 1885 to No. 65, in the same street, where they remained ten years. Last year they removed to No. 66, where they occupy five floors. The building is owned by the company, and includes also No. 68, rented in part to the Joseph Dixon Crucible Co. The company are selling-agents for The Goodrich Hard Rubber Co., The B. F. Goodrich Co., the Boston Woven Hose and Rubber Co., and C. J. Bailey.

The Columbia company were closely followed by the New York Rubber Co., who removed from Beekman street to the northwest corner of Reade and Church, which they continue to occupy. The Boston Belting Co. were in Reade street at an earlier date than any of the others mentioned, but soon went down to Chambers, from which they have just returned, to occupy a larger store than ever.

Mentioning the rubber houses in the order of their location, the trade is represented in Reade street by the following concerns:

63. Boston Woven Hose and Rubber Co., tire selling-agency, opened 1896.

66. Columbia Rubber Works Co., removed from Chambers street, 1882, and to their present address, 1895.

70. Boston Rubber Shoe Co., removed from Warren street, May 1, 1880.

72. William Morse & Co., established 1893, removed to present address, 1894.

74. Cleveland Rubber Colthing Co., W. E., Langley agent, since 1892.

81. (*a*) North American Rubber Co.; (*b*) Liberty Rubber Shoe Co., both organized 1895.

80-82. Home Rubber Co., removal from No. 253 Broadway announced for May 1, 1896.

84-86. New York Rubber Co., removed from Beekman street about 1882.

88-89. United States Rubber Co.'s general offices [and selling-agencies of Goodyear's Metallic Rubber Shoe Co., Jersey Rubber Shoe Co., Meyer Rubber Co., New Brunswick Rubber Co., and Woonsocket Rubber Co.] since 1893.

100-102. Boston Belting Co., removed from Chambers street, April 1, 1896.

111. Enterprise Rubber Co., now removing from No. 168 Church street.

Reade street is likewise a part of the downtown bicycle district in New York, which has shown recently a marvelous degree of development. A very extensive trade in tires is done by most of the mechanical-goods houses above mentioned. Two concerns who manufacture and sell pencil-rubbers and erasers are the Joseph Dixon Crucible Co., No. 68 Reade, and A. W. Faber, No. 78 Reade street. There are also two or three jobbing houses on the street, whose signs read "Boots, shoes, and rubbers."

AUSTRIA imported last year 604,722 pounds of rubber overshoes, valued at almost 1,000,000 florins, against 246,695 pounds in 1894. Of last year's imports, 554,236 pounds were supplied by Russia, 17,637 pounds by Germany, 9480 pounds by Great Britain, and 23,369 pounds by all other countries.

* * *

ACCORDING to *Die Gummi-Zeitung*, pneumatic-tired carriages are no longer a novelty in St. Petersburg. The authorities are said to be contemplating the admission of none but rubber-tired vehicles on certain streets, as the other carriages splash so badly.

SINGLE-TUBE TIRES AND THE TILLINGHAST PATENTS.

ALL manufacturers of single-tube tires, together with hundreds of purchasers and users of them, are well aware by this time of the published statements of Col. Theodore A. Dodge, the owner of the Tillinghast patents. It is safe to say that no feature of the suddenly-developed business of tire-making and tire-selling has been more generally discussed, or elicited stronger expressions of approval and disapproval, than has this. A brief review of the whole subject is therefore timely.

The two patents under which Colonel Dodge has been issuing licenses were granted to Pardon W. Tillinghast as follows: No. 486,915, November 29, 1892 (application filed June 20, 1892), and No. 497,971, May 23, 1893 (application filed September 2, 1892). The litigation in reference to these, up to date, has been based upon the latter patent, the claims of which follow:

"1. A pneumatic tube, consisting of a rubber air-tube, and outer covering, substantially as specified, with the ends of the air-tube and other component parts securely united by vulcanization, substantially as described, thereby constituting an integral complete tire.

"2. A pneumatic tire, composed of a rubber tube, an intermediate layer of fabric, and an outer covering of rubber, substantially as described, having all its rubber joints and component parts simultaneously vulcanized together, forming an integral annular tire.

"3. A pneumatic tire, composed of an inner rubber air-tube, having its original ends connected by means of an internal rubber bushing, an outer rubber covering, and an intervening layer of fabric, all the parts being vulcanized together, forming an integral tire.

"4. A pneumatic tire, composed of an inner rubber air-tube, covered with fabric, and having its original ends connected by means of an internal rubber bushing, and the joint strengthened by an outer layer or winding of fabric, and an outer rubber covering inclosing the original tube and its strengthening layer, all the parts being vulcanized together, forming an integral tire.

"5. A pneumatic tire, composed of an inner rubber air-tube, covered with textile fabric, and having its original ends connected and strengthened at the joint by an outer layer or winding of fabric, and an outer rubber covering, inclosing the original tube and its strengthening layer, all the parts being vulcanized together forming an integral tire."

While it is contended that all these claims are essential, and that all of them have been infringed upon by certain manufacturers, the second of the claims may be singled out as embodying the distinctive feature of the Tillinghast process of manufacture. As for the claims in patent No. 486,915, there will be copied here only a paragraph from the specification, referring to former types of tires:

"Heretofore pneumatic tires have been constructed with an inner air-tube of vulcanized rubber, provided with a covering of canvas, and a separately-vulcanized outer rubber covering; but the separately-formed parts are liable to chafing and rapid wear by rubbing contact with each other; but with my improved tire, as above described, the parts of which are all vulcanized together, the outer and inner rubber tubes are so attached to each other that the chafing action between the several parts of the tire will be prevented and a durable non-penetrable tire will be produced."

Among the numerous antecedent patents referred to by certain parties in interest as foreshadowing the Tillinghast claims, may be mentioned, first, the original pneumatic-tire patent—issued to Robert William Thomson in England (December 10, 1845—No. 10,990). His specification read in part:

"The elastic belt is made as follows: A number of folds of canvas, saturated and covered on both sides with India-rubber or Gutta-percha in a state of solution, are laid one upon the other, and each fold connected to the one immediately below it by a solution of India-rubber or Gutta-percha, or other suitable cement. The belt thus formed is then sulphurized by immersion in melted sulphur or exposure to the fumes of burning sulphur, which renders it more pliable and prevents it getting stiff on exposure to cold; or the belt may be made of a single thickness of India-rubber or Gutta-percha, in a sheet state, and sulphurized, as aforesaid, and then enclosed in a canvas cover."

It may properly be added that the Thomson patent was not for a single-tube tire, but for a tire of rubber and fabric enclosed in a leather shoe, the inner tube being of the "butt-end" variety.

Amos W. Thomas, of Philadelphia, is also mentioned as having had patented pneumatic tires prior to the date of the Tillinghast patents, which anticipated the single-tube idea. The specification for Thomas's English patent of March 12, 1889, contained this statement:

"My invention consists, fourthly, of two or more concentric tubes, made of elastic or compressible material fitting closely to and lying or nested within each other and either secured together or so arranged that each tube may be capable of an independent creeping movement with respect to its neighbor."

But no claim with relation to the connection of outer and inner tubes occurs in the specifications of any of Thomas's United States patents—No. 399,354 to No. 399,362, inclusive, dated March 12, 1889, for which applications were filed at different times between December 14, 1887, and June 30, 1888. In patent No. 399,356 it is specifically stated that the two tubes—inner and outer—were "free to creep, the one with respect to the other."

Still another patent pointed to by the defense against the proprietors of the Tillinghast patents is that of John Boyd Dunlop, granted in England in 1888 (No. 10,607). He states in his specification:

"In carrying out my invention I employ a hollow-tube tyre of India-rubber surrounded with cloth, canvas or other suitable material adapted to withstand the pressure of the air introduced and contained within the tube tyre as hereunder mentioned. The canvas or cloth being covered with rubber or other suitable material to protect it from wear on the road."

The original Dunlop patent covered a single-tube tire, as distinguished from the detachable tire now manufactured under the combined patents of Dunlop and Welch.

* * *

THE companies who have become licensees under these patents are among the strongest and most progressive of the manufacturers of single-tube tires and, at the present time, embrace The B. F. Goodrich Co., Hodgman Rubber Co., Boston Woven Hose and Rubber Co., Pope Manufacturing Co., Hartford Rubber Works Co., Hartford Cycle Co., New York Tire Co., and the Newton Rubber Works. In each case the license is given in the form of a contract, a copy of which has been given to THE INDIA RUBBER WORLD by Colonel Dodge. Under

this contract the licensee agrees to keep exact account of all tires sold, that record to be open to the inspection of the licensor's agent, to render statements of sales within fifteen days after the first day of each month, and to pay as royalty 25 cents per pair for all pneumatic tires sold or otherwise disposed of. Tires given to replace those guaranteed but proving defective are exempt from royalty.

Under the Sherman law a combination of manufacturers for the purpose of keeping up prices is illegal. The owner of a patent, however, may make separate contracts with individual companies until he has embraced a whole industry and thus keep up prices on the goods made under his patents without violating the anti-trust law. Thus Colonel Dodge's contract arranges that the licensee shall agree to sell no standard 28-inch tires for less than $6 per pair, and other sizes and styles in proportion according to a schedule affixed to the contract. The licensee admits the validity of the Tillinghast patents and agrees neither to infringe them nor contest their claims. The licensor agrees on his part within six months after written notification of infringement of by third parties to bring suit unless the infringement in his judgment be only trivial. The contract contains the usual clauses as to forfeiture and as to its effects upon heirs, assigns, etc. The schedule under which at present the licensees are working quotes as prices $6 a pair for standard 28-inch tires, $5.50 a pair for standard 26-inch tires, $4.50 a pair for standard 24-inch tires.

The terms are payment in sixty days from actual date of delivery, 2 per cent. off for cash in ten days; after sixty days 6 per cent. interest. Freight prepaid to any point in the United States but no express charges paid. Seconds are to be sold at any price, but each second must be branded "Seconds" in letters of double pica size on the rim side of the tire at a point opposite the valve and the manufacturer's or trade-mark stamp to be abraded.

Tires may be repaired free of charge by a manufacturer, but the customer must pay all transportation charges. No advertising of tires in any cycle-manufacturer's catalogue to be paid for in any manner. The licensee agrees to furnish the licensor with a list specifying all contracts existing March 15, 1896, for a less price or on more favorable terms than above set down.

* * *

WILLIAM A. REDDING, of No. 38 Park row, New York, counsel for the Pope Manufacturing Co., said to an INDIA RUBBER WORLD man with respect to litigation over the Tillinghast patents:

"The only suit yet filed for infringement of these patents was by the Pope Manufacturing Co. against the Boston Woven Hose and Rubber Co., in the United States circuit court at Boston, in December, 1895. After the employment of able counsel by the defendants, an agreement was reached outside the courts, and the suit dropped. But previously Mr. Tillinghast himself had given notice to the Pope Manufacturing Co. that they would be sued for infringement if they manufactured hose-pipe tires without respecting the validity of his patents. About the same time that papers were filed in the suit against the Boston Woven Hose and Rubber Co., similar papers were prepared for suits against two or three other tire-manufacturing concerns, who had knowledge of the proposed suits. These parties became licensees under the Tillinghast patents, however, and the suits were not filed.

"It is not claimed that these patents cover every single-tube tire that it is possible to make, but that the Tillinghast is the one practicable form of hose-pipe tire now in use, and that all the tires in this class, whether hand-made or otherwise, not made under our license, infringe upon our patents."

"THERE is nothing new in the claims in the Tillinghast patents," said a large manufacturer of tires of the single-tube variety, who is not working under license from Colonel Dodge. "First, it was not new to use an annular mold. Secondly, it was not new to vulcanize the ends of a tire together. Why, the ends of the old cushion tires were vulcanized together. In the third place, it was not new to use a fabric between the outer and inner tubes of rubber entering into the manufacture of tires. I believe that the original Dunlop patent and one of Amos W. Thomas's patents, both antedating the Tillinghast patents, will be found to have anticipated the salient features of the latter."

* * *

SPEAKING of the contract the signing of which is the first step in becoming a licensee, a progressive manufacturer said: "This is a serious step to take. In the first place, I acknowledge the validity of the Tillinghast patents and agree never to contest them, no matter what future light may be thrown upon them. Then, too, Colonel Dodge gives himself a big loophole in his promise to protect me unless in his judgment the trespass by infringement is trivial. Further than this, how am I sure that the big companies already in have not contracts made prior to their signing with Colonel Dodge that will enable them to run the whole of this season without putting up a cent? Aside from this, why should I, a manufacturer of tires, open my books to a rival manufacturer of the same goods and allow him to know the names of my best customers and the amounts that they buy?"

With these very pertinent inquiries in mind, THE INDIA RUBBER WORLD man sought the treasurer of a prominent rubber concern who have taken out a license, who is usually averse to talking for publication but was so interested in the subject in hand that he broke his rule for once and said: "We are licensees because we believe in the patents. When suit was first entered we laughed at the claims set forth and were paying very little attention to the matter until our counsel, who is a very able patent lawyer, advised us that we were likely to get badly beaten and we hastened to change our course. With regard to contracts that were made in the past, and upon which outsiders may fancy that no royalty is paid, the matter stands thus: We have but just signed the contract with Colonel Dodge, yet we pay royalties on all tires shipped since the first of January, except of course seconds. Speaking of seconds you say that some claim that the number of them should be limited to a certain proportion of one's output. I doubt if that is necessary. The word 'seconds' is burned into the rubber on a point where all will know where to find it. Few wheel-manufacturers will want any such label that will cast a doubt upon the quality of the stock in the whole wheel. Certainly the riders, who already know of the branding plan and who are likely more and more to learn of it, are the last who will favor the use of damaged goods. I don't think that there is any danger that any will make tires and brand them seconds in order to cut prices and evade the royalty. It would not be profitable. Another thing is that we do not tell the licensor the names of our customers, but simply the amount of our monthly shipments, just as is done in a host of royalty plans that are in vogue the country over."

Col. Theodore A. Dodge was found in his office at No. 56 Equitable building, Boston, and said:

"This is not a trust or anything of the sort. It is simply a plan for the good of the whole tire trade, and it is my wish to run it on the broadest possible lines. Any reputable maker of single-tube tires may have a license and receive protection in the business if he will but live up to the contract. I am fully

persuaded of the strength of the Tillinghast patents or I should not be doing as I am, and the fact is those already licensed make three quarters of the single-tube tires now produced. You may say that the main point at issue is a very narrow one—the first production of a single-tube tire as a vulcanized homogeneous whole. I agree with you, but Tillinghast succeeded in doing what others had been striving to do and until he did it they had failed. Once he showed the way they were able to do it. As legal decisions go in patent cases to-day his patents will be sustained, in my honest judgment."

* * *

On the last day of March, at the Murray Hill Hotel, in New York, there was a meeting of manufacturers of single-tube tires, called to consider the best manner of dealing with the owners of the Tillinghast patents. Eight companies were represented. An interesting discussion ensued, the general feeling being that it was the duty of those who had not become licensees to unite and resist the demands of Colonel Dodge. Resolutions were passed which are now in the hands of a committee who are at work upon a plan for a defensive alliance. To show the extent of the interests involved in this question of license it is necessary only to state that there are twenty-five companies at present making single tube tires who have not as yet become licensees.

THE MONTH IN THE RUBBER-GOODS TRADE.

In the announcement of prices for rubber footwear for the season of 1896-97, the manufacturers have made practically no change in their lists, while the discounts which have been in force since October 1 last are to be continued. No extra discount is offered this year to retailers whose orders are received during the summer months, as was done in the two past seasons. There has been no public expression of opinion on the part of the controlling spirits in the rubber-shoe industry as to the results from this extra discount in former years, but the fact that it has been omitted from their program for the current season is sufficient evidence that it must have failed to give satisfaction. The original intention was to stimulate the early placing of orders by means of a more liberal discount during the summer months, in order to equalize the business to some extent, and keep the factories busy filling orders in the summer months, instead of waiting until the first snowfall to know what the trade wanted. Early orders meant the early maturity of bills, however, and doubtless many dealers would prefer, for this reason, to postpone ordering rubbers as long as possible, even if they should cost more. It may be assumed, too, that the backwardness of the winter just past, causing stocks to be carried almost to the end of the season, will serve somewhat to influence retailers against buying early this year.

During the first year that the present lists were in force (1893-94) the discounts were: First grade, 20 per cent.; second grade, 20 & 12 per cent.; third grade, 20 & 12 & 12 per cent. During the next year the discounts were the same, with an extra discount of 5 per cent. to retailers on orders filled between April 1 and October 1. Last year the following table showed the range of discounts, as applied to some representative prices, showing the change in the cost of goods to retailers at the middle of the season:

LIST PRICE.	Before Oct. 1.			After Oct. 1.		
	First grade.	Second grade.	Third grade.	First grade.	Second grade.	Third grade.
	20%	20&12%	20-12-12%	15%	15&12%	15-12-12%
$5.20	4.16	3.66	3.22	4.42	3.89	3.42
4.50	3.60	3.17	2.79	3.83	3.37	2.97
3.00	2.40	2.11	1.86	2.55	2.24	1.97
2.25	1.80	1.58	1.39	1.91	1.68	1.48
2.00	1.60	1.41	1.24	1.70	1.50	1.32
.90	.72	.63	.55	.77	.67	.59

Comparison of the figures on the right of the table with those on the left will show how much higher rubbers will be billed if bought this summer than during the same period of 1895, though the prices are no higher than prevailed during the winter months. Since no dates are named in connection with the new announcement, it is to be presumed that the companies reserve the right to change the discounts at any time that may seem proper.

As for terms for the new season, bills for deliveries between April 1 and October 1, both inclusive, shall not be dated later than November 1, net thirty days, 1 per cent. off for cash in ten days. If paid prior to the 10th of November, 8 per cent. per annum to that date and 1 per cent. may be allowed. If paid between November 10 and the 1st of December, 8 per cent. per annum only may be allowed. Bills for deliveries between November 1, 1896, and March 31, 1897, both inclusive, shall be payable net, thirty days from date of shipment, or 1 per cent. off for cash in ten days.

The changes in the new printed lists are, first, the omission of certain lines of goods which have been in least active demand during the past year or two, secondly, a few additions, and, third, a readjustment of prices on youths' lines to lessen the difference between these and boys' lines. What are known in the trade as engraved shoes and imitation sandals with fancy tops have been dropped. More lines of footwear are being produced this year with pointed toes than before. As for the changes in prices, this list covers the more important:

	Old.	New.
Youths' Hurons	$ .85	$ .95
Youths' lumbermans	.75	.85
Youths' arctics	1 00	1.10
Youths' sandals	.40	.45
Youths' heavy overs	.45	.50

Formerly these goods were 15 and 20 cents below boys' lines; the difference is now only 10 cents.

Two statements which appear to have been authorized by the companies are that the prices of crude rubber have advanced to a degree justifying a readjustment of the discounts, and that the demand for pointed toes has necessitated a fresh expenditure for lasts sufficient to augment the cost of production considerably. Reference to The India Rubber World of February 10 last (page 147) will show a chart representing the comparative prices of crude rubber for different years, the average weekly price for fine Pará having been 6¾ cents per pound more in 1895 than in 1894. The range in the former year was between 65 and 73 cents, and in the latter year between 70 and 81 cents. As for lasts, a factory producing a full line of rubber footwear will require about three times as many pairs of lasts as the daily capacity of the factory in boots and shoes—or 3000 pairs for each 1000 pairs of daily production. These lasts not only cost considerable money, but it is no small matter to have to buy a large stock of lasts merely on account of a whim of fashion—such as the demand for pointed toes—which may lose favor before the season ends. By the way, some firms not hitherto making lasts for rubbers, have been getting orders in this line since the craze for "razor" and "needle" toes began.

Some of the shoe journals are warning the trade not to be caught by and by with too large a stock of narrow-toed leather shoes, but dealers in rubbers are in less danger of disaster from this source, since rubbers are made on orders to a larger extent than leather goods.

As heretofore, the price-lists of the Boston Rubber Shoe Co. and of the factories embraced in the United States Rubber Co. are in agreement. The other manufacturers have not yet made their prices known to the trade.

Some changes have been made in the selling department of the United States Rubber Co., presumably in the interest of economy and of concentration, by which the services of several gentlemen long connected with the individual companies in the combination are dispensed with.

Walter S. Ballou remains general selling-agent, with offices at Providence and New York. E. H. Payne will have charge of the New York office, Chester J. Pike at Boston, E. C. Allen at Chicago, and C. W. Linthicum at Chicago. The Philadelphia office will no longer be maintained, which involves the retirement of Arthur Miller and A. B. Darling. E. H. Cutler and F. D. Balderston retire from the Boston office, and R. H. Griffin from the New York office. Among other changes reported is the retirement of William Lincoln Sage from his connection with the United States Rubber Co. in Boston, his successors being Charles A. Coe & Co.

The past winter had an exceptionally small snowfall until after January 1, and it was not until March that the snow began in real earnest. Since the last issue of this paper New York has had one snowfall of 12 inches. The fiercest snow of the season was experienced at Cleveland and Detroit on April 1, when snow fell in such quantities as to drift to a depth of eight or ten feet, interrupting railway traffic. A dealer in Woonsocket who was reported during March as saying that he expected to end the season with $6000 worth of rubbers on hand, was selling later $200 worth per day, and hoping to come out square. His case was doubtless typical of many, and it is probable that stocks were very largely reduced during the recent bad weather, even though it came so late.

The present month will witness the resumption of activity among the rubber-shoe factories, some of which were closed during the past winter for an unusually long period. From every one comes reports of increasing the stock of narrow-toed lasts. The three companies manufacturing tennis-shoes report great activity and an unexpectedly large demand for their goods. These companies are the National and Wales-Goodyear companies and the Goodyear's India Rubber Glove Manufacturing Co.

The manufacturers of rubber shoes at Toronto have issued a circular to their customers withdrawing all quotations on their goods. The company's circular states that all grades of crude rubber have been steadily advancing, and that indications point to still higher prices. All orders now booked will be filled at the quotations lately outstanding, but from now until further notice prices must be based upon the cost of crude rubber at the time the order is received.

* * *

OPINIONS differ, in the hose trade, with respect to prospects for business this year. It is admitted that the weather last summer was, in most quarters, not especially favorable to the sale of garden-hose, and that the conditions of general business were such as to discourage buying in every line. The question now is the extent to which last summer's stocks were disposed of. While one manufacturer holds to the opinion that the new season begins with stocks well cleaned out, another will say that, on account of the small demand from consumers last summer, dealers still have on hand good amounts. However this may be the factories have been running full in this particular line, and a dry season would doubtless lead to a very heavy sale, for the reason that, all other things being equal, the development of the country results in a yearly increase in the demand for small hose. Besides, buying for some time past has been on such a conservative scale that, if there should be a season of drought, people would be fairly obliged to buy, and there undoubtedly has been some improvement in the buying ability of the people as a whole. In the fire-hose line, the trade is practically unaffected by seasons. Most cities, however, buy fire-hose but once a year, but as they do not all buy at once the demand is spread out through the twelve months. Yet many cities in the Middle and Eastern states place their orders in the spring months. New York generally advertises for hose in July. The extent of the buying of hose by the railways can be traced from government statistics and these fail to show much improvement since the beginning of the hard times among the railroads. On the whole, however, the mechanical-goods trade may fairly be described as active, and in such a condition as to have been able to maintain the new prices adopted during the winter.

* * *

IN the druggists'-sundries line, manufacturers still complain of low prices. It is no longer easy to raise prices to correspond with an advance in raw rubber, for example. On the other hand, in the hands of reckless salesmen, and oftentimes doubtless with the knowledge of their employers, competition is all the time lowering quotations, without regard to the cost of manufacture. The trade is in too many hands for concerted action with regard to prices, though the manufacturers of druggists' sundries on an important scale are not as numerous as the shoe-manufacturers were when their combination was formed. The latter was the result of many years of talk and work, however, and the same number of years from now may bring about a less active state of competition in druggists' and other goods of this class. In a recent issue of this journal appeared an interview with a dealer who decried the sale of cheap fountain-syringes by his competitors, and pointed out the lack of economy in buying cheap goods in this class. Though long established in trade, the same dealer has since been advertising extensively a line of syringes at the same low figures, indicating how difficult it is to withstand the fever for cutting down prices when it once becomes epidemic. Fountain-syringes, by the way, continue to gain popularity, and at the expense of the bulb form of syringes. There is also a steadily-growing output of atomizers, which nowadays are adapted to the use not only of perfumes, but to almost every form of medicament. Some years ago the German makers of fancy atomizers set the fashion of weaving or knitting a network of silk about the rubber bulbs of atomizers, and it was copied by our own manufacturers. This addition, however, is beginning to be regarded with disfavor, since the net-covered bulbs are not more attractive than uncovered bulbs of suitably-colored rubber; besides, the netting is liable to catch the dust, and so become more difficult to keep clean. Some domestic manufacturers have been quite successful in curing red rubber for atomizer-bulbs, resulting in a pleasing appearance and durable quality. Heretofore the foreigners have had the advantage in producing the glass needed for the perfume-atomizers, with respect to the tasteful styles imported and to prices, but a great many are now brought out of which even the glass is of American make and of good appearance.

* * *

"WHAT would be the effect of a foreign manufacturer of mack-

intoshes setting up a plant in America, waterproofing his goods, as a means of evading the tariff?" was asked of a home manufacturer. "It would be slow work building up a trade. Foreign waterproof goods have not been popular here with people who have contrasted their wearing qualities with goods made here. The acid process used on the other side gives results which are less satisfactory in the climate of the United States than the steam process employed here. It is to be presumed that any foreigner starting a branch factory here would employ the same processes here as at home, and the same objection would apply to the goods made here as to those now imported. Even if he should adopt a change of processes, something more than a well-known name would be needed to give the enterprise a start. It would be on the same footing as a newly-started American house. The chief problem with us just now," he continued, "is to secure fabrics that will give the effect of non-waterproof goods—that is, will not look like mackintoshes while having the best waterproof qualities. In the making of such goods the foreigners have been more successful up to date than our own cloth-manufacturers, and this has given the import trade in mackintoshes whatever foothold it has enjoyed."

It happens, however, that steam processes are employed in waterproofing abroad. A pocketful of different circulars comes from one of the largest concerns in England extolling the merits of their "patent steam-vulcanized proofing," backed up by testimonials dated as far back as six years. But these circulars further point out that "for the first time in the history of such goods" can they be guaranteed to remain soft and pliable in a severe winter, or not to decay if kept in stock in a hot climate.

DEATH OF FOWLER M. RAY.

FOWLER M. RAY, who died at Nashua, N. H., on March 24, was a familiar figure in the India-rubber industry forty years ago. He was the son of Fowler M. Ray, to whom several patents were issued on the manufacture of India-rubber springs for railroad cars, particularly in 1848, 1849, and 1850. The American Institute gold medal was awarded for the Ray car-springs, and upon his patents was based the New England Car Spring Co. In 1851 the elder Ray was the agent in New York of the car-spring company and of Goodyear's Metallic India Rubber Co., at No. 104 Broadway. During the succeeding three years he was president of the New England Car Spring Co., with an office at No. 104 Broadway and a factory on East Thirty-fourth street. About 1855 the Ray Car Spring Co. came into existence, with a factory at No. 100 East Thirty-first street, and offices at No. 102 Broadway, with Fowler M. Ray as president. Fowler M. Ray, Jr., the subject of this sketch, was identified with the latter business, and subsequently in other India-rubber lines, as the result of which he amassed a large fortune. The Mead Rubber Co., of Trenton, N. J., and its successor, the old Star Rubber Co., long advertised car-springs "made of fine Pará and a compound invented by the late F. M. Ray." The younger Ray inherited a comfortable fortune as the result of his father's inventions, which was increased, it is said, by successful speculations in Gutta-percha. He had lived in Nashua about seven years, and was seventy-two years and three months old when he died, with nothing left of his fortune. A romantic story has been printed of the marriage of the junior Ray's father against the wishes of his family, who were people of distinction in Ireland, of his being disowned and adopting the maiden name of his wife (Ray), and of their coming to America to seek a fortune. There were born to them a son, the Fowler M. Ray who has just died, and a daughter, Harriet Ray, who was a famous beauty at one time.

WILLIAM SCHAFFER, assistant superintendent of the Goodyear's India Rubber Glove Manufacturing Co. (Naugatuck, Conn.), died on March 17 of consumption. He was thirty-nine years of age and left a wife. He was a brother of F. F. Schaffer, the well-known secretary of the company and their superintendent, and was an able, conscientious young man, thoroughly posted in the rubber business, and one whose loss will be keenly felt.

* * *

CHARLES J. METZGER died at his home in New Haven, Conn., on March 13, at the age of sixty-six years. He settled in New Haven about forty years ago, and was a member of the firm of M. Zunder & Co. up to 1883. Afterward he was engaged in the rubber industry, under the name of the Metzger Rubber Co., manufacturing rubber clothing, gossamers, and a few mackintoshes. Several years ago he retired from business. He left a widow and eight children.

* * *

WILLIAM HENRY REYNOLDS died at Colchester, Conn., on February 24, at the age of thirty-seven years. He became an employé of the Hayward Rubber Co., and was soon promoted to positions of responsibility in their factory, in which he continued when the business was transferred to the Colchester Rubber Co. After the factory was closed he was placed in charge of the property. He is survived by a widow and one child.

* * *

DENNIS GATELY died at his home at Mamaroneck, N. Y., on April 3, at an advanced age. Originally connected with the Boston Belting Co., he became superintendent of the first factory of the New York Belting and Packing Co., nearly a half-century ago, and remained in their employ until led by old age to retire from active pursuits. He had a talent for invention and devised valuable improvements in machinery and processes, from which he established a reputation as being one of the most expert rubber-men of his day.

SOLD MOST OF HIS "RUBBER COMMON."

THE will of Mr. John F. Holt, formerly superintendent of the Woonsocket Rubber Co., contains clauses which are somewhat troublesome to the executors. He bequeathed to certain relatives 825 shares United States Rubber preferred, and 2200 shares United States Rubber common; that is when his will was made, May 17, 1894, he indicated how he wished this stock to be disposed. A number of months before his death however, the common stock being fairly high, he sold 2000 shares of it and when he died had left but 200 shares. Mr. Holt frequently spoke during the months preceding his death of altering his will so that those who were to have the common stock might get its equivalent in money. This however he did not do. Most of the common stock was bequeathed in the family. 1600 shares being given to Joseph Banigan's children and grandchildren, 200 to W. O. Park and 100 to J. M. Park of Woonsocket, 50 to Francis Flynn, Jr., of Woonsocket, 50 to Jos. Baves of Millville, 100 to J. H. O'Neil and 100 to two children of Col. O'Reilly. The cash bequests of Mr. Holt outside those of his immediate family were $6000 in all, making his bequests in stock and cash outside of those to his widow and children, amount, according to the market price of rubber stock to about $130,000. It is probable that the affair of the common stock being a family matter will be settled amicably.

THE Long Island Rubber and Cycle Co. have opened an office in the Postal Telegraph building, New York.

Some of the shoe journals are warning the trade not to be caught by and by with too large a stock of narrow-toed leather shoes, but dealers in rubbers are in less danger of disaster from this source, since rubbers are made on orders to a larger extent than leather goods.

As heretofore, the price-lists of the Boston Rubber Shoe Co. and of the factories embraced in the United States Rubber Co. are in agreement. The other manufacturers have not yet made their prices known to the trade.

Some changes have been made in the selling department of the United States Rubber Co., presumably in the interest of economy and of concentration, by which the services of several gentlemen long connected with the individual companies in the combination are dispensed with.

Walter S. Ballou remains general selling-agent, with offices at Providence and New York. E. H. Payne will have charge of the New York office, Chester J. Pike at Boston, E. C. Allen at Chicago, and C. W. Linthicum at Chicago. The Philadelphia office will no longer be maintained, which involves the retirement of Arthur Miller and A. B. Darling. E. H. Cutler and F. D. Balderston retire from the Boston office, and R. H. Griffin from the New York office. Among other changes reported is the retirement of William Lincoln Sage from his connection with the United States Rubber Co. in Boston, his successors being Charles A. Coe & Co.

The past winter had an exceptionally small snowfall until after January 1, and it was not until March that the snow began in real earnest. Since the last issue of this paper New York has had one snowfall of 12 inches. The fiercest snow of the season was experienced at Cleveland and Detroit on April 1, when snow fell in such quantities as to drift to a depth of eight or ten feet, interrupting railway traffic. A dealer in Woonsocket who was reported during March as saying that he expected to end the season with $6000 worth of rubbers on hand, was selling later $200 worth per day, and hoping to come out square. His case was doubtless typical of many, and it is probable that stocks were very largely reduced during the recent bad weather, even though it came so late.

The present month will witness the resumption of activity among the rubber-shoe factories, some of which were closed during the past winter for an unusually long period. From every one comes reports of increasing the stock of narrow-toed lasts. The three companies manufacturing tennis-shoes report great activity and an unexpectedly large demand for their goods. These companies are the National and Wales-Goodyear companies and the Goodyear's India Rubber Glove Manufacturing Co.

The manufacturers of rubber shoes at Toronto have issued a circular to their customers withdrawing all quotations on their goods. The company's circular states that all grades of crude rubber have been steadily advancing, and that indications point to still higher prices. All orders now booked will be filled at the quotations lately outstanding, but from now until further notice prices must be based upon the cost of crude rubber at the time the order is received.

* * *

OPINIONS differ, in the hose trade, with respect to prospects for business this year. It is admitted that the weather last summer was, in most quarters, not especially favorable to the sale of garden-hose, and that the conditions of general business were such as to discourage buying in every line. The question now is the extent to which last summer's stocks were disposed of. While one manufacturer holds to the opinion that the new season begins with stocks well cleaned out, another will say that, on account of the small demand from consumers last summer, dealers still have on hand good amounts. However this may be the factories have been running full in this particular line, and a dry season would doubtless lead to a very heavy sale, for the reason that, all other things being equal, the development of the country results in a yearly increase in the demand for small hose. Besides, buying for some time past has been on such a conservative scale that, if there should be a season of drought, people would be fairly obliged to buy, and there undoubtedly has been some improvement in the buying ability of the people as a whole. In the fire-hose line, the trade is practically unaffected by seasons. Most cities, however, buy fire-hose but once a year, but as they do not all buy at once the demand is spread out through the twelve months. Yet many cities in the Middle and Eastern states place their orders in the spring months. New York generally advertises for hose in July. The extent of the buying of hose by the railways can be traced from government statistics and these fail to show much improvement since the beginning of the hard times among the railroads. On the whole, however, the mechanical-goods trade may fairly be described as active, and in such a condition as to have been able to maintain the new prices adopted during the winter.

* * *

IN the druggists'-sundries line, manufacturers still complain of low prices. It is no longer easy to raise prices to correspond with an advance in raw rubber, for example. On the other hand, in the hands of reckless salesmen, and oftentimes doubtless with the knowledge of their employers, competition is all the time lowering quotations, without regard to the cost of manufacture. The trade is in too many hands for concerted action with regard to prices, though the manufacturers of druggists' sundries on an important scale are not as numerous as the shoe-manufacturers were when their combination was formed. The latter was the result of many years of talk and work, however, and the same number of years from now may bring about a less active state of competition in druggists' and other goods of this class. In a recent issue of this journal appeared an interview with a dealer who decried the sale of cheap fountain-syringes by his competitors, and pointed out the lack of economy in buying cheap goods in this class. Though long established in trade, the same dealer has since been advertising extensively a line of syringes at the same low figures, indicating how difficult it is to withstand the fever for cutting down prices when it once becomes epidemic. Fountain-syringes, by the way, continue to gain popularity, and at the expense of the bulb form of syringes. There is also a steadily-growing output of atomizers, which nowadays are adapted to the use not only of perfumes, but to almost every form of medicament. Some years ago the German makers of fancy atomizers set the fashion of weaving or knitting a network of silk about the rubber bulbs of atomizers, and it was copied by our own manufacturers. This addition, however, is beginning to be regarded with disfavor, since the net-covered bulbs are not more attractive than uncovered bulbs of suitably-colored rubber; besides, the netting is liable to catch the dust, and so become more difficult to keep clean. Some domestic manufacturers have been quite successful in curing red rubber for atomizer-bulbs, resulting in a pleasing appearance and durable quality. Heretofore the foreigners have had the advantage in producing the glass needed for the perfume-atomizers, with respect to the tasteful styles imported and to prices, but a great many are now brought out of which even the glass is of American make and of good appearance.

* * *

"WHAT would be the effect of a foreign manufacturer of mack-

intoshes setting up a plant in America, waterproofing his goods, as a means of evading the tariff?" was asked of a home manufacturer. "It would be slow work building up a trade. Foreign waterproof goods have not been popular here with people who have contrasted their wearing qualities with goods made here. The acid process used on the other side gives results which are less satisfactory in the climate of the United States than the steam process employed here. It is to be presumed that any foreigner starting a branch factory here would employ the same processes here as at home, and the same objection would apply to the goods made here as to those now imported. Even if he should adopt a change of processes, something more than a well-known name would be needed to give the enterprise a start. It would be on the same footing as a newly-started American house. The chief problem with us just now," he continued, "is to secure fabrics that will give the effect of non-waterproof goods—that is, will not look like mackintoshes while having the best waterproof qualities. In the making of such goods the foreigners have been more successful up to date than our own cloth-manufacturers, and this has given the import trade in mackintoshes whatever foothold it has enjoyed."

It happens, however, that steam processes are employed in waterproofing abroad. A pocketful of different circulars comes from one of the largest concerns in England extolling the merits of their "patent steam-vulcanized proofing," backed up by testimonials dated as far back as six years. But these circulars further point out that "for the first time in the history of such goods" can they be guaranteed to remain soft and pliable in a severe winter, or not to decay if kept in stock in a hot climate.

DEATH OF FOWLER M. RAY.

FOWLER M. RAY, who died at Nashua, N. H., on March 24, was a familiar figure in the India-rubber industry forty years ago. He was the son of Fowler M. Ray, to whom several patents were issued on the manufacture of India-rubber springs for railroad cars, particularly in 1848, 1849, and 1850. The American Institute gold medal was awarded for the Ray car-springs, and upon his patents was based the New England Car Spring Co. In 1851 the elder Ray was the agent in New York of the car-spring company and of Goodyear's Metallic India Rubber Co., at No. 104 Broadway. During the succeeding three years he was president of the New England Car Spring Co., with an office at No. 104 Broadway and a factory on East Thirty-fourth street. About 1855 the Ray Car Spring Co. came into existence, with a factory at No. 100 East Thirty-first street, and offices at No. 102 Broadway, with Fowler M. Ray as president. Fowler M. Ray, Jr., the subject of this sketch, was identified with the latter business, and subsequently in other India-rubber lines, as the result of which he amassed a large fortune. The Mead Rubber Co., of Trenton, N. J., and its successor, the old Star Rubber Co., long advertised car-springs "made of fine Pará and a compound invented by the late F. M. Ray." The younger Ray inherited a comfortable fortune as the result of his father's inventions, which was increased, it is said, by successful speculations in Gutta-percha. He had lived in Nashua about seven years, and was seventy-two years and three months old when he died, with nothing left of his fortune. A romantic story has been printed of the marriage of the junior Ray's father against the wishes of his family, who were people of distinction in Ireland, of his being disowned and adopting the maiden name of his wife (Ray), and of their coming to America to seek a fortune. There were born to them a son, the Fowler M. Ray who has just died, and a daughter, Harriet Ray, who was a famous beauty at one time.

WILLIAM SCHAFFER, assistant superintendent of the Goodyear's India Rubber Glove Manufacturing Co. (Naugatuck, Conn.), died on March 17 of consumption. He was thirty-nine years of age and left a wife. He was a brother of F. F. Schaffer, the well-known secretary of the company and their superintendent, and was an able, conscientious young man, thoroughly posted in the rubber business, and one whose loss will be keenly felt.

* * *

CHARLES J. METZGER died at his home in New Haven, Conn., on March 13, at the age of sixty-six years. He settled in New Haven about forty years ago, and was a member of the firm of M. Zunder & Co. up to 1883. Afterward he was engaged in the rubber industry, under the name of the Metzger Rubber Co., manufacturing rubber clothing, gossamers, and a few mackintoshes. Several years ago he retired from business. He left a widow and eight children.

* * *

WILLIAM HENRY REYNOLDS died at Colchester, Conn., on February 24, at the age of thirty-seven years. He became an employé of the Hayward Rubber Co., and was soon promoted to positions of responsibility in their factory, in which he continued when the business was transferred to the Colchester Rubber Co. After the factory was closed he was placed in charge of the property. He is survived by a widow and one child.

* * *

DENNIS GATELY died at his home at Mamaroneck, N. Y., on April 3, at an advanced age. Originally connected with the Boston Belting Co., he became superintendent of the first factory of the New York Belting and Packing Co., nearly a half-century ago, and remained in their employ until led by old age to retire from active pursuits. He had a talent for invention and devised valuable improvements in machinery and processes, from which he established a reputation as being one of the most expert rubber-men of his day.

SOLD MOST OF HIS "RUBBER COMMON."

THE will of Mr. John F. Holt, formerly superintendent of the Woonsocket Rubber Co., contains clauses which are somewhat troublesome to the executors. He bequeathed to certain relatives 825 shares United States Rubber preferred, and 2200 shares United States Rubber common; that is when his will was made, May 17, 1894, he indicated how he wished this stock to be disposed. A number of months before his death however, the common stock being fairly high, he sold 2000 shares of it and when he died had left but 200 shares. Mr. Holt frequently spoke during the months preceding his death of altering his will so that those who were to have the common stock might get its equivalent in money. This however he did not do. Most of the common stock was bequeathed in the family. 1600 shares being given to Joseph Banigan's children and grandchildren, 200 to W. O. Park and 100 to J. M. Park of Woonsocket, 50 to Francis Flynn, Jr., of Woonsocket, 50 to Jos. Baves of Millville, 100 to J. H. O'Neil and 100 to two children of Col. O'Reilly. The cash bequests of Mr. Holt outside those of his immediate family were $6000 in all, making his bequests in stock and cash outside of those to his widow and children, amount, according to the market price of rubber stock to about $130,000. It is probable that the affair of the common stock being a family matter will be settled amicably.

THE Long Island Rubber and Cycle Co. have opened an office in the Postal Telegraph building, New York.

NEW TRADE PUBLICATIONS.

[Catalogues mentioned here may be obtained gratis on application to the manufacturers issuing them.]

THE McKim Gasket Co. (No. 319 Dearborn street, Chicago) send out their price-list for 1896, abrogating all former quotations, of the McKim patent gasket. These gaskets, as used for steam, water, gas, air, etc., are made of India-rubber encased in soft-rolled copper, extra annealed, with a view to accommodating themselves to faced or rough joints, and being capable of withstanding abnormal pressure, temperature, or circulation. For use in connection with alkalies and acids, and for some other purposes, soft metal and packing are substituted for India-rubber and copper. The different grades of McKim gaskets are described, in addition to the lists of dimensions and prices.

=Catalogues devoted to special lines and issued frequently and with special reference to seasons, find much favor with Manager Forsyth, of the Boston Belting Co. Thus March brought with it the yearly Garden Hose Catalogue of the company, listing their various grades and brands. There are also advertised a large assortment of such appliances as couplings, nozzles, reels, sprinklers, and hose menders.

=The Boston Belting Co.'s Illustrated Catalogue and Price-List of Fire-Hose, though bearing the date of March, would be equally timely, of course, in any season. Descriptions and prices are given of rubber, cotton, and linen hose, for fire and mill use, together with couplings, hose-racks, and other hose sundries. There are several pages of information for hose-users, conveniently arranged, and of such value as to justify the copyrighting of the catalogue.

=Every Man and His Pocketbook, is the title of an exceedingly neat *brochure* which talks of various brands of hose, and not only talks of them but sings of them. The brands in question are the White Anchor, Akron, Geyser, Cascade, Deluge, Artesian and Whirlpool. These seven brands are described and illustrated in a semi-humorous manner for which the artist of the B. F. Goodrich Co. is famous. Whether one is a hose user or not, it is well worth the while to send to Akron for a copy of this booklet.

=In a pamphlet published by the Fuerst von Lobkowitzsche Bergdirection, proprietors of the largest tungsten-producing mine in Europe, the following novel recipe occurs: "Artificial rubber can be produced by mixing a thick solution of glue with tungstate of soda and muriatic acid. A precipitate results, composed of a compound of tungstic acid and glue, which at a temperature of 29-30° C. is so elastic that it can be drawn into thin leaves. When cool it becomes hard and brittle, and may, therefore, replace natural rubber for certain purposes."

=A seasonable catalogue is that of J. H. Kohmescher & Co., of No. 120 East Fourth street, Cincinnati, devoted to Garden Hose and hose specialties. There are also added illustrations of the various other articles kept in a general rubber store. The object of this catalogue is to facilitate mail orders in the retail trade.

=The first shoe catalogue to reach us since the beginning of a new year in the trade was that of the Boston Rubber Shoe Co. As usual with the catalogues of this company, the one for 1896-97 is attractive in appearance, in addition to containing just the amount and character of information required by retailers respecting their line of products. A lavish use has been made of illustrations. Besides the customary cuts of styles of boots and shoes, there are large full-page views of a hunting scene, a log-rafting scene, and other pictures illustrating the uses of various forms of footwear. Six or seven of these handsome pictures are good views of historic places in Boston. The catalogue has a distinctive cover which includes a view of Bunker Hill monument.

=The Mattson Rubber Co. (New York) have issued a new illustrated price-list of their Druggists' Sundries Department. As already announced, this company now own the plant of the late Atlas Rubber Co., which has been used as the foundation for an extensive wholesale sundries department. A number of novelties are catalogued, including a new perfume atomizer—the Mattson No. 105—and a new rapid-flow fountain-syringe, packed in a box having the unique form of a closed book. The articles listed are so well illustrated that only brief descriptions are needed, and the convenience of customers has been consulted by placing the index in the first part of the book.

=The Hodgman Rubber Co. (New York) are advertising their bicycle-tires in their characteristic way, which is equivalent to saying that their catalogues and circulars are attractive to the eye, entertaining as reading matter, and satisfactory in the explanation of what the firm have to offer. They have just brought out a catalogue, enclosed in a special envelope for mailing, with the title: "What It Is—The Hodgman Single-Tube Rubber Pneumatic Bicycle-tire"; a leaflet entitled "In Brief," giving condensed information on the subject; and a show-card on which is an excellent imitation of the appearance,—color and everything—of their single-tube tire.

CATALOGUES RECEIVED.

=Eagle Pencil Co., No. 73 Franklin street, New York=[Illustrated list of lead pencils, rubber erasers, and penholders.] 16 p.

=A. Major Cement Co., No. 232 William street, New York=Book of Valuable Information [concerning Major's rubber cement and some other things.] 16 p.

=American Ball Nozzle Co., Nos. 837-847 Broadway, New York=The Gilmour Atomizer. [Illustrated description of an adaptation of the ball-nozzle to applying insecticides.] 16 p.

MR. FLINT AND THE RUBBER TRADE.

SINCE the retirement of Charles R. Flint from the New York Commercial Co., Limited, a few months ago, rumors have been in circulation, from time to time, of his preparations to reënter the business of importing crude rubber. In answer to a direct question on this point from THE INDIA RUBBER WORLD, since the beginning of the year, Mr. Flint said:

"I no longer have any connection whatever with the crude-rubber trade."

Consignments of crude-rubber continue to be made to Mr. Flint's firm, but mainly of Centrals—a class of rubber very much divided up, instead of being controlled in a few hands, as in the case of Pará rubber. Almost every merchant in New York having business with Central American ports at times receives shipments of Central rubber. For instance among the rubber consignees are Charles Ahrenfeldt & Son, who are in the crockery trade on a large scale. They make frequent shipments to Central American ports, and receive in return the products of that region, including India-rubber. In the same way Flint, Eddy & Co. are importers of rubber.

DR. CYRUS EDSON estimates that the people of these United States spend each year $20,000,000 for chewing-gums. There are, in the United States, at least five immense chewing-gum factories, a dozen of moderate size, and innumerable insignificant firms. One company alone sells $5,000,000 worth every year, including the quantity exported. We expend $8,000,000 a year more to purchase chewing gum than we give for the maintenance of the clergy of all denominations.—*The Spatula.*

RUBBER STATISTICS FROM PARA AND WASHINGTON.

ACCORDING to Reimers & Meyer's table of the exports of crude India rubber from Pará and Manáos for 1895, it will be seen that the shipments again broke the record, the excess over the figures for the preceding year having been exceptionally large. The receipts at Pará for the calendar year were 45,438,442 pounds, and the shipments slightly more, or 45,788,613 pounds. The names of the leading exporters are given below, with the consignments for Europe and the United States, the figures representing pounds:

EXPORTERS.	United States.	Europe.	Total.
* Pusinelli, Prüsse & Co	7,994,501	5,348,340	13,342,841
Adelbert H. Alden	8,350,846	376,846	8,727,692
La Rocque, Da Costa & Co	2,941,459	2,585,429	5,526,888
Rud. Zietz	695,029	2,915,524	3,610,553
Banco de Manáos	2,224,520	316,666	2,541,186
Denis Crouan & Co		2,017,180	2,017,180
Singlehurst, Brocklehurst & Co	530,378	759,145	1,289,523
R. F. Sears & Co	170,671	868,637	1,039,308
J. H. Andresen	264,338	567,184	831,522
A. Fernandes & Co	2,249	800,695	802,944
Marius & Levy	560	797,761	798,321
H. de la Beaume	557,905	121,661	679,566
A. de Freitas & Co		660,194	660,194
A. Berneaud & Co	391,136	72,212	463,348
Edmund Reeks	314,283	189,298	503,581
B. A. Antunes & Co	28,818	434,066	462,884
Kahn, Polack & Co		430,186	430,186
Luiz Schill & Sobrinho		328,763	328,763
Pires Teixeira & Co	128,067	127,461	255,528
Freitas, Sobrinho & Co	67,902	177,536	245,438
From Serpa		10,436	10,436
Sundry small shippers	142,192	1,078,539	1,220,731
Total	24,804,854	20,983,759	45,788,613
Total, 1894	23,062,386	19,869,306	42,931,692
Total, 1893	25,011,027	17,163,404	42,174,431
Total, 1892	25,202,008	15,603,324	40,805,332
Total, 1891	23,872,690	15,335,157	39,207,847
Total, 1890	21,137,177	15,004,652	36,141,829
Total, 1889	20,004,066	14,946,888	34,950,894

In 1889 the percentage of the Pará shipments going direct to Europe was 42. The figures declined to 38 per cent. in 1892, and advanced in 1895 to 46 per cent.

* * *

FROM the treasury department at Washington comes the revised official figures of the India-rubber movement for the United States for the calendar year 1895, which are presented below in comparison with the statistics for 1893 and 1894:

IMPORTS.	1893.	1894.	1895.
India-rubber (pounds)	39,634,706	35,370,889	41,766,774
Gutta-percha	487,970	704,168	3,031,155
Total	40,122,676	36,075,057	44,797,929
India-rubber goods	$340,600	$303,781	$309,513
Gutta-percha goods	50,001	53,173	75,962
Total	$390,601	$356,954	$385,475
EXPORTS.			
Boots and shoes	$ 205,637	$ 211,393	$ 244,592
All other	1,235,409	1,324,751	1,432,027
Total, domestic	$1,441,046	$1,536,144	$1,676,619
Foreign manufactures	$ 169,622	$ 4,097	$ 7,574
Crude India-rubber (pounds)	1,846,727	1,615,076	2,217,697
Gutta-percha	19,616	464,602	47,859
Total	1,866,343	2,079,678	2,265,556

* Representing Reimers & Meyer (New York and Boston); Heilbut, Symons & Co. (London and Liverpool); and the Boston Rubber Shoe Co. (Boston).

With respect to the countries whence the crude India-rubber was imported the government statement supplies these figures, relating of course to pounds:

	1894.	1895.
United Kingdom	4,987,096	7,479,816
Germany	1,195,363	1,055,045
Other Europe	2,065,642	2,496,492
Mexico	129,088	158,449
Central America	1,116,547	1,391,002
West Indies [Venezuelan]	32,646	30,758
Brazil	23,642,155	26,603,173
Other South America	1,594,784	1,748,778
Africa	122,217	56,023
East Indies	461,166	736,149
Other countries	24,185	11,089
Total India-rubber	35,370,889	41,766,774
Gutta-percha	704,108	3,031,155
Grand total	36,075,057	44,797,929

The last table which will be given here relates to the value of exports of domestic manufactures of India-rubber (including boots and shoes) for several past calendar years:

YEAR.	Value.	YEAR.	Value.
1886	$ 782,610	1891	$1,349,491
1887	845,096	1892	1,555,411
1888	833,126	1893	1,441,046
1889	937,497	1894	1,536,144
1890	1,175,151	1895	1,676,619

A POOL IN GAS-TUBING.

THE active price-cutting which has prevailed among the rival manufacturers of gas-tubing for some time past resulted on April 1 in the combination of the leaders in this industry under the style of the United Gas Tubing Co. It is intended that the various factories shall be continued, but central headquarters have been established at No. 71 Varick street (near Canal), New York, where J. J. Vautier is in charge as treasurer. The other officers have not yet been elected, nor have the proposed articles of incorporation been filed.

Included in the pool are (1) the New York Gas Tubing Co., No. 779 Greenwich street, New York, operated since January, 1894, by J. G. Law and J. J. Vautier; (2) the American Tubing and Webbing Co., of Providence, R. I., who have been at work for sixteen years and have lately removed into an $80,000 building of their own; and (3) J. C. Granger, No. 584 Hudson street, New York, whose business was founded about sixteen years ago by Marks M. Nichols, who was succeeded by Granger & Nichols.

Some time ago Nichols went to Cleveland and established a gas-tubing factory, which burned down last month, and he is now regarded as out of the business. Some gas-tubing is made by J. Elwood Lee, a manufacturer of druggists' sundries at Coshocton, Pa., but not on a large scale. Isaac Hawn until recently was making gas-tubing at Providence, R. I., but is reported to have gone into braid-work exclusively. This is believed to exhaust the list of gas-tubing makers in the United States, and there is no similar industry abroad.

The consumption of gas-tubing is estimated not to have exceeded 300,000 feet in a year five years ago, while it amounted in 1895 to more than 4,000,000 feet. The reported daily average production now is 5600 feet for the New York Gas Tubing Co., about the same for the Providence plant, and between 3000 and 4000 feet for Gardner, in New York. The demand

has been greatly augmented by the growing use of gas-stoves for heating and cooking, and the principal channel for the trade is through the stove-dealers. Rubber-men also handle gas-tubing, and dealers in gas-fixtures include it in their stocks. By the way, the manufacture of gas-stoves last year is said to have exceeded that of the preceding year by more than 60 per cent., and the rapid growth still continues.

The gas-tubing manufactured by these companies is built upon a spiral wire, about which a cotton braid is woven; when this stage of the manufacture has been reached, the tubing is treated with a specially-prepared oil, after which it receives a coating of glycerin and glue, the composition of which is a secret; the tubing is again braided, which is the finishing step, except for cutting it into proper lengths and attaching rubber ends. This tubing is flexible enough for any purpose, and is claimed by the manufacturers to be superior to rubber, for the reason that the latter is liable to be porous and not impervious to gas. It is used for other purposes than for gas, but at the rate, according to one manufacturer, of about one foot for 10,000 feet of gas-tubing. There is still a small demand for rubber-tubing, say, $\frac{3}{32}$-inch in thickness, coated with $\frac{1}{16}$-inch of glycerin and glue, and the regulation tubing is largely tipped with rubber treated by this method. The patents on this line of manufacture have expired, but some of the processes remain a secret, rendering it possible for the industry to become monopolized. There is a constant and increasing export trade in these goods.

RANDOM NOTES FROM PARA.

TO THE EDITOR OF THE INDIA-RUBBER WORLD: The laying of the sub-fluvial cable from Pará to Manáos has been completed, the line having been opened for business on February 10. The cable-ship *Faraday* arrived here on January 6, twenty-two days out from London, having on board all the necessary material for the cable. With one exception she was the largest ship (5000 tons) ever afloat upon the Amazon. The progress of the steamer upstream was reported to Pará by messages sent from the various intermediate stations, as they were reached in turn. A scientist on board the *Faraday* employed himself in making collections for the British Museum.

On the German emperor's birthday (January 27) Mr. Fritz Pusinelli, the rubber merchant, who is also the German consul at Pará, as his partner, Mr. Prüsse, is the consul at Manáos, gave a magnificent ball in honor of the occasion. Among the guests were Mr. and Mrs. C. von Siemens. Mr. von Siemens had come here to represent the European house of Siemens & Halske at the inauguration of the electric-lighting system. Together with his wife he sailed on the *Origen* for New York on February 2.

The Pará Gas Co., Limited, with a capital of £108,435, have been registered in London, to carry on at Pará and elsewhere in Brazil the business of a gas-supply company.

The Manáos Electric Lighting Co. have been organized for the illumination of the city named in the company's title, with a capital of 600,000 milreis, to be increased if necessary to 2,000,000. The president of the company is Col. Robert D. Evans, of New York, and the treasurer is Charles R. Flint, of the same city. The management at Manáos of the proposed enterprise is in the hands of Dr. H. Jaramillo. By the way, the latest spelling here for the capital of Amazonas is *Manaus*.

The message of the governor of Amazonas at the opening of the state congress showed a remarkable advance in the condition of the state, as indicated by the amount of the revenues. In five years the increase of collections has been nearly five fold. The exportation of India-rubber, however, has not correspondingly increased. This has been due, for the past two years, to the prevalence of fevers in the region of the river Javary. It is estimated that the rubber-gatherers in that region have been reduced in number one-half by this cause. The governor believes that the improvement of the sanitary conditions of this important Amazonian region would bring an enormous increase to the state revenues through the stimulation of rubber-gathering. The increase in rubber exports from Amazonas in the fiscal year 1895 was 865,000 pounds less than the increase in the preceding year.

The newspapers of Maranham report that a quantity of rubber extracted from a new source, a large tree found in that state, was sent recently to England, where it was classed as *entrefina*.

Receipts at the Pará custom-house during the year 1895 were exceptionally large, due chiefly to the increase in the export of India-rubber. They amounted to 12,415:175 $995, as against 9,972:146 $445 in the preceding year.

Mention has already been made in THE INDIA RUBBER WORLD of the proposed addition of four new steamers to the fleet of the Amazon Steam Navigation Co., Limited. One of these has already reached Pará, while the other three are nearing completion. These are each 178 feet over all, 33 feet molded beam, 8 feet 9 inches molded depth, and classed A1 at Lloyds (the highest classification for river navigation). It is expected that their speed will be about twelve miles an hour. They are named the *Paes de Carvalho* (for a leading citizen of Pará); the *Antonio Olyntho* (for the Brazilian minister of agriculture); the *Lauro Sodré* (for the governor of Pará); and the *Prudente de Moraes* (for the president of the republic). The first of these to be completed was the *Paes de Carvalho*.

But this is not the only increase of the company's fleet. A fifth steamer, the *Progresso*, is being built for service between Pará and the two pleasure and health resorts of Pinheiro and Mosqueiro. A sixth new steamer has been ordered for the navigation of the river Araguary, in the territory in dispute between France and Brazil. The company have also acquired a very fine steamer, built on the Clyde, and sent out to Pará within the last few months for account of a private firm. Orders have also been placed at Port Glasgow for two other steamers, intended principally for cargo purposes on the upper rivers, the trade of which, especially in the case of Iquitos, is growing steadily.

For the coming industrial exposition at Pará a great iron pavilion has been ordered from Belgium. An immense hotel is also to be constructed here, to be in readiness for the occasion.

The congress in session at Pará has again postponed the proposed Pará exposition—this time indefinietly.

At the headwaters of the Rio Pauhiny, at a place called Xingu, a rubber proprietor named José Barbosa de Oliveira, together with his laborers, was surprised by a party of Acarinus Indians, who killed four men, carrying away their heads as trophies. Sr. Barbosa collected a body of men and marched to the settlement of these savages, only to find it deserted. The huts were destroyed, however, after a quantity of stolen goods had been recovered from them. GRAO PARA.

Pará, Brazil, March 11, 1896.

INDIA-RUBBER CASES IN THE COURTS.

IN the suit of the assignee of the old National Rubber Co. against the Rhode Island Hospital Trust Co. and others over $24,000 worth of mortgage bonds issued by the former, the appellate court at Providence, R. I., has entered a decree ordering that the testimony-in-chief for the complainants be

closed on or before April 16, that the respondents close their testimony-in-chief on or before May 16, and that the complainants have until June 1 to close their testimony in rebuttal. The object of the suit is to enjoin the sale of the property heretofore belonging to the National Rubber Co., which was mortgaged in 1884 to the Rhode Island Hospital Trust Co. to secure the payment of their bonds. Louis Schaefer, one of the respondents, is the holder and claims to be the absolute owner of forty-two of the bonds, amounting in the aggregate to $24,000, together with interest due, which bonds, having matured, he is seeking to enforce payment of, in accordance with their terms. The grounds upon which the rubber company rely is that Schaefer holds the bonds without any consideration paid by him, in trust for William R. Grace & Co., against whom the rubber company have claims in set-off to an amount greater than that due on the bonds, and have commenced suit in New York against the said Grace & Co. for the recovery of the amount due.

STARR L. BOOTH, who, until March 2, 1894, was foreman of the hose-room of the National India Rubber Co. (Bristol, R. I.), at the rate of $1200 a year, and who was then removed and offered work at $2 a day, sued the company for $2000 for breach of contract—the remainder of the year's wages claimed to be due and the injury to plaintiff's reputation resulting from his discharge. The defense of the rubber company was that no salary contracts were made by the year, but that Booth was paid by the day, and his position was changed when his work as foreman ceased to be satisfactory. On March 7 a jury awarded Booth a verdict for $840—the remainder of the year's wages at $1200.

THE Stoughton Rubber Co. (Boston) have brought suit in San Francisco, Cal., against J. W. Girvin & Co., of that city, to recover $1113.75 on an account for goods sold and delivered.

ANTWERP AS A RUBBER MARKET.

IMPORTS of India-rubber at Antwerp during 1895 increased by 100 per cent. over the figures for the preceding year. According to recent advices a still further increase may be expected, on account of the large quantities which have been gathered in the Congo country, and which in time may be expected to reach the Antwerp market. The government of the Congo Free State has interested itself in having better methods adopted in the gathering and curing of India-rubber, in consequence of which there has been an improvement in the quality of the receipts from that source, with a corresponding advance in prices. Among the new grades of Congo rubber "Equator," "Lopori," and "Bussira" have found especial favor, selling at from 6.15 *f.* to 6.65 *f.* per kilogram. The fluctuations of prices during 1895 were not great, and were as follows:

	Francs per Kilo.	Cents per Pound.
Kassai, red and black, fine	6.95@7.12	= 51@52½
Upper Congo	5.05@6 65	= 44@50½
Lower Congo, medium quality	3.50@4.90	= 31@42½
Lower Congo, thimbles	3.40@3.70	= 30@32½

The figures which follow indicate the rapid development of the transactions in rubber at Antwerp:

YEAR.	Imports. Pounds.	Sales. Pounds.	Stock, Dec. 31.	Average Price
1889	10,340	10,340	.....	....
1890	66,000	66,000	.....	....
1891	46,200	46,200	.....	....
1892	138,523	129,991	8,532	48¼ cents.
1893	367,771	358,347	18,016	50 cents.
1894	604,076	517,319	86,739	48¼ cents.
1895	1,168,363	972,884	195,479	48¼ cents.

The consigners of rubber to Antwerp during 1895 were as follows:

	Pounds.
Congo Free State	626,386
Belgian Commercial Company for the Upper Congo, Limited	272,518
Anglo-Belgian India-Rubber Co.	155,217
Antwerp Congo Commercial Co.	44,557
Vegetable Products Co.	3,230
A. De Browne de Tiége	2,932
Other Source	63,523
Total	1,168,363

The estimate of the importation at Antwerp for 1896 is 1000 tons, or just double the amount of last year.

THE BEST FIRE-HOSE IS THE CHEAPEST.

THE city of Bridgeport, Conn., expends about $5000 a year for fire-hose, at 80 cents per foot. At a recent meeting of the city board of apportionment a fire-hose salesman named Sanford asked for and obtained a hearing, when he asserted that a number of manufacturers had attempted to sell hose to the city at lower prices than 80 cents, but that the fire commissioners would not give them a chance, being wedded apparently to a certain brand of hose. Continuing, he said the board would find, on inquiry, that the manufacturers of the 80-cent hose had offered the same article to other cities at 48 cents per foot. The latter price would mean a yearly saving to Bridgeport taxpayers of $2000 a year.

Commissioner Pyle answered that the board bought a particular brand of hose because it had proved to be the best obtainable for their needs. It not only had sustained the initial tests satisfactorily, but had proved durable. He had tried to buy the same hose for 79 cents, but without success. If anyone should produce the same quality of hose for a lower price, the board would gladly buy it. They could now buy hose for less than 80 cents—even as low as 42—but the experience of the department had proved that there would be no economy in doing so.

Mr. Sanford—I have learned that the 48-cent hose sold to the Brooklyn department last month was subjected to the most severe tests ever put upon hose.

Mr. Pyle—Do you believe the hose offered for 48 cents was the same as the hose we use?

Mr. Sanford—It's just as good.

Mr. Pyle explained to the board that it was necessary to use a single-jacketed hose, owing to the size of the Bridgeport hose-wagons, which would not carry a thousand feet of heavier hose. The hose referred to by Mr. Sanford, he said, he did not believe to be the same hose as was used in Bridgeport.

Mr. Sanford—It is not the same hose, but it is just as good.

Mr. Pyle—If it is not the same hose I don't know what you are talking about.

Mr. Sanford—It's of the same make; the same company manufacture it.

To an INDIA RUBBER WORLD man Commissioner Pyle said that the ordinary tests of fire-hose were not alone sufficient to determine the board's selection. The question of the life of hose could be decided only by the test of time, and they had found the initial cheapness of certain hose more than offset by the cost of frequently replacing it. He had taken samples of the 42-cent hose submitted to the board, cut off strips of the rubber, and found it "dead." He should not favor buying such rubber at any price. When asked why the board stopped at 80 cents, instead of buying the hose at $1 per foot made by the same company and bought largely by New York city, Mr. Pyle said that, while the board favored buying the best, there were local conditions to be taken into account.

TRADE AND PERSONAL NOTES.

THE business formerly conducted by Sinclair & Co., jobbers in mechanical rubber goods at No. 88 West Broadway, New York, is being continued at the same place under the style of the Wiona Rubber Co., the change dating from April 1. The management of the business is in the hands of S. R. Cately, an experienced rubber-man, connected hitherto with the Stephen Ballard Rubber Co., Sinclair & Co., and other houses in this line.

=Converse & Pike (Boston), have opened an office and store at No. 142 Duane street, New York, which will be in charge of W. F. Stevens, who was lately with William Morse & Co. Their specialty is the Wales-Goodyear line of rubbers.

=Charles A. Coe & Co. began business as jobbers of rubber shoes at No. 168 Congress street, Boston, on April 1, succeeding William L. Sage. They will be sole agents in New England for the American Rubber Co., besides handling Woonsocket boots and "Marvel" rubber shoes. Mr. Coe was formerly a member of the Morse-Coe Shoe Co., of Omaha, Neb.

=The Monarch Rubber Shoe Co. (St. Louis) are located in a handsome new building, Nos. 814 816 Washington avenue, which is 46×160 feet in size, and embraces seven stories and a basement. They occupy it jointly with the William A. Orr Shoe Co. Their stock includes mechanical rubber goods, "Bell Brand" mackintoshes, and "Bell Brand," "Neptune," and "Imperial" brands of rubber footwear. They will have six traveling men this season, in addition to Manager H. E. Wagoner, who makes occasional trips.

=The Boston Woven Hose and Rubber Co. had the only exclusive tire exhibit at the San Francisco bicycle-show which opened on March 7, and proved to be a successful and creditable affair.

=The J. F. W. Dorman Co. (Baltimore, Md.) are reported to be at work on orders from two large bicycle firms for 700 of the special steam-vulcanizers designed by their president, William A. Moore, for tire-making.

=The fire-department of New York city on April 8 awarded a contract for 2000 feet of three-inch carbolized rubber-lined hose, Maltese Cross brand.

=At a meeting of the directors of the United States Rubber Co. on March 31, H. B. Hollins withdrew his resignation as a director which had been presented at a previous meeting. The company started on the same date to take an inventory of stock of the different factories, preparatory to making a complete statement at the annual meeting on March 19. It is stated that there are now about 6000 stockholders.

=The Middlesex last manufactory at Maplewood, Mass., was recently destroyed by fire, the loss amounting to $1000. The company manufactured lasts for rubber-shoe work.

=Prof. W. Lascelles-Scott, one of the foremost India-rubber chemists of England, is at the present time to the United States, and was a recent caller at the office of THE INDIA RUBBER WORLD.

=The Enterprise Rubber Co. are sole New England agents for the "Volt" and "Trim" tires manufactured by the New Brunswick Rubber Co. (New Brunswick, N. J.) These tires are already having a fine sale in this territory.

=The report that the factory of the Dennison Manufacturing Co., on Vale street, Roxbury, Mass., was to be leased or purchased by a rubber concern is denied by the owners.

=A petition in insolvency has been filed against the Chelsea Wire Fabric Rubber Co., by the Home Rubber Co. (of Trenton N. J.), a creditor.

=G. Brice, who is special agent for foreign India-rubber chemists and deals in materials used in rubber factories, requests THE INDIA RUBBER WORLD to make a note stating that he has removed from No. 235 Rue St. Martin to No. 92 Rue de la Victoire, Paris.

=Wedding cards are out announcing the marriage of Mr. James J. Mulconroy, of the firm of Latta & Mulconroy, Philadelphia, to Miss Ella Frances Gaw.

=Prescott Bros. (Cornhill, Boston), are sending out some very neatly printed circulars calling attention to their garden-hose and lawn goods for the coming season. Mr. Wm. Keyes, the proprietor of the company, states that business this year is quite up to that of any past year, in spite of the fact that the hose season has been delayed by the inclement weather.

=An English electrical paper chronicles the fact that a very fair quality of rubber is now being secured in New Zealand from the banyan-tree.

=Canada has the rubber fever to a certain extent. At the present time there is talk of a rubber factory in St. Stephen, New Brunswick, and another in Bowmanville, Ontario. In the latter place it is planned that the factory employ fifty hands. A bonus of $8000 and exemption from taxes for fifteen years is asked. In St. Johns, N. B., there is also a certain amount of agitation which is shown by the following quotation from a political paper: "The idea of erecting a rubber factory in some suitable place in the province has not been abandoned. The scheme has received every encouragement from practical rubber manufacturers, and capitalists in the province are hopeful of success in pushing it."

=In a letter from the Akron India Rubber Co., under date March 26, they say: "As some of our friends and customers seem to rest under the impression that the recent assignment of the J. F. Seiberling & Co., involves this company in financial difficulties, we take this means of advising all whom it may concern that we are a separately-organized incorporation, doing business under the laws of Ohio, and that we can in no manner be affected by the business reverses of any other concern. Mr. J. F. Seiberling still retains his holdings in the company intact, as he also does in various other enterprises and financial institutions with which he has been identified for many years."

=The Standard Rubber Corporation (Brockton) asks THE INDIA RUBBER WORLD to correct the statement made in the March issue concerning their February business. What they wished to say was that their shipments for that month were the largest February shipments they had ever had—not the largest shipments for any single month.

=The Birmingham Iron Foundry (Birmingham, Conn.), replying to the inquiry in last month's INDIA RUBBER WORLD, call attention to the fact that they have manufactured hose-wrapping machines for mechanical goods manufacturers for a number of years past.

=The Standard Rubber Corporation (Brockton, Mass.) have just put in an eight-ton English spreader, which they imported from across the water.

=Mr. Edwin L. Stanwood, Jr., and Mr. Samuel S. Boyd have opened an agency for the Boston Woven Hose & Rubber Co., at No. 1730 Arapahoe street, Denver, Col. They will handle the products of this company there, paying special attention to the popular "Vim" tires.

=English papers chronicle the fact that rubber covered truncheons or policemen's clubs are the invention of Dr. Nelson of New York.

=The Newton Rubber Works are among the latest single-tube tire manufacturers who have become licensees under the Tillinghast patents.

=Mr. Nathaniel Whitehead, of the Keystone Rubber Works Erie, Pa.), was a recent visitor to New York.

=Chester J. Pike and E. H. Paine, of the United States Rubber Co., are on a trip through the west and will probably not be back to their respective offices before the middle of April.

=The Clifton Manufacturing Co. (Boston) are out with a new rubber bicycle-saddle.

=Fred. Ackert, a young German rubber-manufacturer, is in New York trying to market a compound for making hard rubber gaskets for ordinary steam pressure as well as for superheated steam.

=Mr. H. H. Francis, at one time president of the Middlesex Rubber Co. (Middletown, Conn.), is said to have shipped some rubber machinery of which he was the individual owner to Bridgeport, Conn., where it is to be set up and used.

=The Loando Hard Rubber Co. (Boonton, N. J.) have just had their factery equipped with a 66-horse-power turbine water-wheel.

=The "Velvet" is the name of a new garden-hose, a detailed description of which will appear in the May INDIA RUBBER WORLD. It is manufactured by the Chicago Electric Wire Co. (Wilmington, Del.)

=W. M. Farwell, manager of the Eastern Agency of the Empire Rubber Co., (Boston), is finding a very ready sale for both the hose-pipe and double-tube tires manufactured by his company.

=It is said that the Pioneer Electric Dam Co., at Ogden, Utah,—a great water power enterprise,—is now sure of success and is under contract to have the works finished December 1, 1897. This has been made possible by a bond issue of $1,500,000, the whole of which, it is said, was taken by Joseph Banigan.

=The New York Belting and Packing Co., Limited, on March 31, shipped thirty-three miles of hose from their Passaic factory alone. This looks as if there would be no dry Sundays among their customers this year.

=George E. Keeler, at one time doing business as the Keeler Rubber Co. at No. 621 Broadway, New York, was recently under arrest on complaint of Ross M. Turner, who was employed in 1894 as a traveling salesman for Keeler, with whom he deposited $75 as a guarantee of his honesty. He claimed to have been discharged after two months, after which he was unable to recover his money; also, that Keeler had obtained deposits in a similar way from other persons, which had not been returned.

=Mr. W. A. Minott, son of Secretary J. A. Minott, of the Goodyear Rubber Co. (New York), and Miss Clara Brewer, of South Orange, N. J., were married at church in that town at 5 P. M. on Monday, April 6. The rubber trade was well represented among the guests.

=Mr. Wm. Yerdon, of hose-band fame, has recently been in New England and New York seeing his many customers and booking a great many satisfactory orders.

=The Jenkins Rubber Co. (Holyoke, Mass.), who make all the well known Jenkins packings, report that their business for 1895 showed an increase over that of the previous year of 40 per cent.

=Spinney, Virtue & Co. (Lynn, Mass.) have purchased from the Neverslip Horseshoe Co., the entire right, title, and interest in the well-known Neverslip horseshoe pads. They have also appointed as exclusive selling-agents Butts & Ordway, No. 500 Atlantic avenue, Boston.

=William Morse & Co. (New York) have bought the stock of McDonnell, Payne & Co., of Baltimore, whose failure was reported in THE INDIA RUBBER WORLD last month. The stock consisted mainly of Woonsocket rubber boots and shoes, and of mackintoshes and rubber clothing from the factories of the American Rubber Co., and the price paid is understood to have been $35,000. The goods have already been shipped to New York.

=George H. Payne, of the late Baltimore firm of McDonnell, Payne & Co., has accepted a position with the National India Rubber Co. (Bristol, R. I.) to represent them in the southern states, with headquarters at Baltimore.

=Thomas B. Odell has been appointed receiver in supplementary proceedings for Walter S, Sinclair, of Sinclair & Co., dealers in rubber goods at No. 88 West Broadway, New York, on the application of William A. Brown & Co., creditors for $5655. The business was taken by Shipton Green on March 9, under a chattel mortgage for $6000. The "Co." was Mrs. Helen L. Sinclair, of Gun, Texas, a sister-in-law of Mr. Sinclair.

=The Eastern Rubber Manufacturing Co. (Trenton, N. J.) have removed their New York office and salesroom from No. 90 to No. 124 Chambers street.

=At the plant of the Colchester Rubber Co. (Colchester, Conn.) fires have been kept burning since the transfer of the manufacture of rubber shoes to Bristol, R. I., in order that the steam pump might be used if necessary for fire-protection. This has now been discontinued, the remaining machinery is to be removed, and only one watchman remains in charge of the plant.

=The failure is reported of The J. F. Seiberling Co., corporation, manufacturers of mowers and reapers, at Akron, Ohio, with branches in several cities. The business was established in 1874, and had a capital of $600,000. The last annual report made a good showing. Mr. Seiberling was interested in several rubber-factories recently started in the western states.

=The Goodyear rubber store at Utica, N. Y., has been removed to No. 133 Genesee street, after an extensive remodelling of the house for the purpose.

=The Superior Rubber Type Co., of Chicago, have removed to Nos. 225-227 Market street, where they have leased the fifth floor for two years at $2400 per year.

=Jacob Burnstine, doing business in Detroit, Mich., under the firm name of J. Burnstine & Co., was burned out on the night of March 8. The house was engaged in handling rags, in connection with which a very large business was done in rubber scrap. On Monday mortgages were given on the stock not consumed by fire, and covering insurance policies amounting to $9900, to secure debts to the extent of $15,733.25.

=The L. Candee & Co. (New Haven) have planned extensive alterations to their plant. A building on East street, 175 × 140 feet in extent, are to be raised one and two stories, and a tin roof put on.

=A syndicate for the purpose of contesting tire patents has been formed in England known as the Pneumatic Tire Defence Association, with its headquarters at Birmingham.

=The Self-Healing Pneumatic Tire Co. of New York, have been capitalized at $30,000, and were incorporated last week. The directors are J. R. Greason, C. H. Chinnock, and A. F. Smith, of Brooklyn.

=The Mineralized Rubber Co., New York, write in answer to an inquiry in our March issue stating that they can furnish information regarding rubber-covered ten-pins and balls.

=Mr. R. A. Leigh has accepted a position with the Reading Rubber Tire Co., as has also Mr. F. W. Heustis, who was formerly with the Newton Rubber Works.

=The Manhattan Rubber Manufacturing Co. have thoroughly organized and equipped a fire service at their factory, at Passaic, N. J. Water is supplied by large pumps, over an artesian well, with sufficient pressure to throw a stream over the tall chimney. At the tests made every man in the service has been at his post within three minutes after an alarm, with six streams of water at work.

=The Peoria Rubber and Manufacturing Co. (Peoria, Ill.) have opened a branch store, for their "Patee" bicycle, at Indianapolis, Ind.

=The Standard Rubber Corporation (Campello, Mass.) were reported last month to have a strike on their hands, but it was short-lived. The hands who left their work one Friday afternoon stated their case the next day and by 1 P. M. had returned to work on a new scale of wages for the new styles of garments lately introduced, which, the stitchers claimed, involved more work than the garments formerly made.

=Edwin B. Dow, for several years past bookkeeper and confidential clerk for The Thomas Martin & Brother Co., elastic-web manufacturers at Chelsea, Mass., is missing from home, charged with embezzlement to the extent of $5000 or more. It is stated that the company, out of consideration for Dow's family, will not prosecute him.

=James Field, of Chicago, was arrested recently at Oconomowoc, Wis., charged with the embezzlement of about $4000 from Morgan & Wright, the Chicago rubber-tire manufacturers.

=The latest report respecting the plant of the Pará Rubber Shoe Co. (South Framingham, Mass.) is to the effect that the Dennison Manufacturing Co.—the tag-makers—will pay $90,000 for the property provided the citizens of South Framingham will subscribe $15,000 of the amount, and that such a subscription is now being made.

=The Telegraph Construction and Maintenance Co. (London and Greenwich) are filling an order for 800 miles of submarine cable to connect Japan with the newly-acquired island of Formosa.

=The Cable Rubber Co. (No. 28 Essex street, Boston), manufacturers of rubber carriage-cloth, report business increasing. They have added one-half to their last year's force of employés, and have put in a new Blake fire-pump, a 30,000-gallon tank for fire use, and two new heaters. They manufacture, in addition to rubber cloth, a line of rubber clothing, horse-covers, wagon aprons and blankets, and are headquarters for the Holden patent aprons.

=The Layman Pneumatic Boat and Sporting Goods Co. have been incorporated under the laws of New York state, with $20,000 capital. The directors named are: E. S. Wadsworth and A. Irving Fuller, of Brooklyn; E. H. Hall, H. D. Layman, C. H. Vrooman, H. C. Wilson, and A. U. S. Lloyd, of New York city.

=The Home Rubber Co. (Trenton, N. J.) have just set up a calender which is one of the largest in use in any mechanical goods factory. The rolls are 76-inch face, and weigh 8000 pounds apiece.

=The Pope Manufacturing Co.'s handsome Boston building—Nos. 219-223 Columbus avenue—was badly damaged by fire on March 12. The loss to building and stock is estimated at $275,000, pretty nearly covered by insurance. There were 1700 new and 175 second-hand bicycles and about 5000 tires burned. Colonel Pope's war-sword, library of works on bicycling, and many other treasures were destroyed.

THE TERM "VULCANITE."

WRITING on "Nomenclature," in the *Dental Register* (Cincinnati), Grant Molyneaux, D. D. S., says: "'Vulcanite' and 'rubber' are often used as synonyms, the former being certainly the proper term. Caoutchouc or India-rubber is a definite hydrocarbon. When this substance is combined with sulphur and other ingredients and is vulcanized or hardened by subjecting it to a definite temperature for a definite time it forms a different compound, which in no manner resembles rubber, but is an ivory-like substance which we call vulcanite."

[VERY few call vulcanite rubber. It is known as *hard*-rubber very generally, and common usage has so established that name that vulcanite is not likely to displace it. Nor does hard-rubber suggest crude rubber to any who know anything about caoutchouc.—THE EDITOR.]

REVIEW OF THE INDIA-RUBBER MARKET.

A QUIET month in the crude India-rubber trade has intervened since our last publication. For a few days after March 10 there was a depression of a cent in the prices then quoted for fine Pará, and it is reported that there were offerings as low as 72 cents. This was probably due to the fact that considerable rubber was known to be afloat, leading purchasers to defer orders until the disposition of the new arrivals should be known. The market afterward revived, until the quotations were a cent higher than at the beginning of the month under review. This, together with the existing strong condition of the market, is accounted for by the statistical position of rubber and the demand from manufacturers.

Although the crop season which has practically ended on the Amazon yielded the largest product ever recorded, the visible supplies of Pará rubber are smaller than at the same date last year. The meaning of this is that the heavy production has been accompanied by a heavier increase in consumption, which, if it should continue through the summer, would reduce the world's stock of Pará crude rubber, by October, to a lower figure than has been known in recent years. The situation has led to the assertion that it would not be surprising if fine Pará rubber should be held at 85 cents before the active beginning of the next crop year.

As for consumption, there is reason to believe that the mechanical-goods trade is using at least an average quantity of rubber. This industry has become so extensive, by the way, that even a quiet condition, with hand-to-mouth purchases, suffices to withdraw a large amount of rubber from stocks every month. There is decided activity among tire-makers, resulting in an effect upon the crude-rubber market easily measured. The rubber-shoe industry during the latter part of the winter was dull, and the same is true of the clothing industry. The wintry weather of March, however, stimulated the sale of rubber footwear to an extent which will prevent any weakness of the market for crude gum from the expectation of a small demand from the shoe-factories next season.

In addition to the arrivals of Pará rubber noted on the following page, is to be noted the steamer *Gregory*, with 310 tons. The *Hildebrand* is afloat for New York, with 432 tons.

During the past month the receipts of Africans have been quite large, but prices have been well maintained, the market for Africans generally being in sympathy with that for Pará grades.

The latest quotations in the New York market are:

Pará, fine, new ta...	74	@76	Benguela.....	46	@47
Pará, fine, old.....	81		Congo Ball.....	36	@40
Pará, coarse, new t a	45	@54	Cameroon Ball	38	@39
Pará, coarse, old....	56		Flake, Ord and Lump..	24	@25
Caucho(Peruvian)strip		@45	Accra Flake.....	15	@18
Caucho(Peruvian)ball	50	@51	Lagos Strips.....		39
Mangabeira, sheet....	40	@42	Liberian Flake	26	@27
Esmeralda, sausage..	48	@49	Madr., primest pinky..	53	@59
Guayaquil, strip.....	35	@41	Madagascar, black.....	40	@43
Nicaragua, scrap	45	@47	Borneo.....	26	@40
Nicaragua, sheet....	none		Gutta-percha, fine grade		1.30
Thimbles.....	34	@35	Gutta-percha, medium..		1.00
Tongues.....	37	@38	Gutta-percha, hard white		85
Sierra Leone.....	25	@52			

PRICES FOR MARCH (ISLAND RUBBER).

	1896.		1895.		1894.	
	Fine.	Coarse.	Fine.	Coarse.	Fine.	Coarse.
First.... ...	74	45	71½	47½	66	47
Highest.....	74½	45½	72½	48	66	47
Lowest	73	42½	71½	47	66	45
Last	74	44	72	47	66	45

The statistical position of Pará rubber in New York and elsewhere is as follows, the figures expressing tons of 1000 kilograms:

	Fine and Medium.	Coarse.	Totals.	Totals 1895.	Totals 1894.
Stock, February 29.....	202	58 =	260	732	1099
Arrivals, March	951	367 =	1318	1542	966
Aggregating.....	1153	425 =	1578	2274	2065
Deliveries, March..... ..	842	348 =	1190	1647	604
Stock, March 31.....	311	77 =	388	627	1461

	1896.	1895.	1894.
Stock in England, March 31.....	1582	1523	870
Deliveries in England, March.....	1025	750	430
Pará receipts, March.	2210	1860	1830
Stock in Pará, March 31.....	505	903	1165
World's supply March 31 (excluding Caucho).	3756	4039	5456
Pará receipts since July 1..... 18,110		17,005	17,160

In regard to the financial situation Albert B. Beers, broker in crude India-rubber and commercial paper (No. 58 William street, New York), advises us as follows:

"There is little to say regarding the market for commercial paper for the past month, as there has been very little demand. many banks having no funds to spare, while those who could buy are very distrustful and scrutinizing on account of recent commercial failures, and therefore are not inclined to invest in this way. However, some small business has been done at 6@8 per cent., the lower rate being for prime well-known names in the rubber line, and the higher for names not so well known, but still considered very good; the paper of small companies, which is always rather difficult to sell, finds no market whatever now. It is hoped that before long there will be a more settled financial outlook, and this will no doubt improve the demand for commercial paper."

IMPORTS FROM PARA.

THE receipts of India-rubber direct from Pará and Manáos at the port of New York since our last publication are reported in detail below, the figures referring to pounds:

March 9.—By the steamer *Justin*, from Manáos and Pará:

	Fine.	Medium.	Coarse.	Caucho.	Total.
Reimers & Meyer.....151,800		34,600	114,600	2,400=	303,400
Lawrence Johnson & Co...	97,400	17,600	54,000	4 400=	173.400
New York Commercial Co.	34,600	3,900	30,800	5,400=	74,700
Joseph Banigan.....	3,900	11,800	21,500	.....=	37,200
Otto G. Mayer & Co.....	25,400	8,000	3,700	.....=	37,100
C. Ahrenfeldt & Son.....	1,900	. ..	22,200	400=	24,500
Shipton Green	7.100	700	10,700	.... =	18,500
Kunhardt & Co.	13,600	3,600	.....	.....=	17.200
P. Lima.....	5,000	1,300	1.200	.....=	7,500
Totals.....340,700		81,500	258,700	12,600=	693,500

March 13.—By the steamer *Madeirense*, from Pará:

Reimers & Meyer	186,200	36,400	77,800	.....=300,400
New York Commercial Co.	63,500	13,600	44.800	.....=121,900
Lawrence Johnson & Co...	25,000	6,800	13,800	21,300= 66,900
George G. Cowl.....	.....	.....	10,800	.....= 10,800
P. Lima.	5,000	.. .	4,500	....= 9,500
Totals	279,700	56,800	151,700	21.300=509,500

March 19.—By the steamer *Cametense*, from Manáos and Pará:

Reimers & Meyer.....	278,800	56 000	130,200	2,400=467,400
New York Commercial Co.	93,500	33,600	50,900	800=178,800
Lawrence Johnson & Co..	135,000	35,700	37,800	300=208,800
Joseph Banigan....	.....	10,700	34,100	.....= 44,800
Shipton Green	11,000	3,700	3,200	.....= 17,900
George G. Cowl....	2,900	700	10,200	.....= 13,800
P. Lima..... ..	4,200	600	4,000	.....= 8,800
Totals.....525,400		141,000	270,400	3,500=940,300

March 30.—By the steamer *Dona Maria*, from Manáos:

Reimers & Meyer 140,400		36,800	60,300	3,200=240,700
New York Commercial Co.	81,500	19,000	40,700	.....=141,200
Hagemeyer & Brunn.....124,600		3,900	11,300	.....=139,800
Charles Ahrenfeldt & Son.	6,900	.....	1,800	77,200= 85,900
Joseph Banigan.....	.....	.....	24,000	.....= 24,000
Kunhardt & Co.....	8,200	2,700	.....	.....= 10,900
K. Mandell & Co.....	.....	.....	500	.....= 500
Total ... .361,700		62,300	138,600	80,400=643,000

April 1.—By the steamer *Gregory*, from Pará:

New York Commercial Co.218,500		34,600	67,200	9,000=329.300
Otto G. Mayer & Co.....	53,900	28,200	41,900	.....=124,000
Lawrence Johnson & Co...	67,500	8,600	16,200	.... = 92,300
Reimers & Meyer.....	47,800	.....	23,900	.....= 71,700
P. Lima.....	3,500	300	4.100	.....= 7,900
Shipton Green.....	1,300	300	2,100	.....= 3,700
Total..... ...392,500		72,000	155,400	9,000=628,900

	1896.	1895.
January Imports from Pará.....2,718,300		2,869,500
February Imports..... .....1.945.900		2,274,400
March Imports.....2,786,300		3,611,700

PARA IMPORTS VIA EUROPE.

March 5.—By the steamer *Majestic*, from Liverpool:

Otto G. Mayer & Co. (Fine)....	24,500

March 7.—By the steamer *Lucania*, from Liverpool:

Reimers & Meyer (Fine).....	23,000

March 14.—By the steamer *St. Paul*, from Southampton:

George A. Alden & Co. (Fine).....	3,300

March 26.—By the steamer *Georgic*, from Liverpool:

Otto G. Mayer & Co. (Medium)....	5,000

March 28.—By the steamer *Britannic*, from Liverpool:

George A. Alden & Co. (Fine)....	50,000

March 29.—By the steamer *Umbria*, from Liverpool:

Reimers & Meyer (Fine)....	35,000

March 30.—By the steamer *La Bretagne*, from Havre:

Otto G. Mayer & Co. (Fine).....	12,000

OTHER NEW YORK ARRIVALS.

BELOW will be found in detail the imports at New York during March, 1896, of India-rubber from Mexico, Central America, and South America, other than Pará grades; also, arrivals at New York of African and East Indian sorts:

CENTRALS.

	POUNDS.
MARCH 1.—By the *Amrum*=Greytown:	
G. Amsinck & Co	4,500
Munoz & Espriella	3,900
Andreas & Co	3,100
Total.....	11,500
MARCH 2.—By the *Finance*=Colon:	
Frame Alston & Co	700

MARCH 2.—By the *Louisiana*=New Orleans:

Albert T. Morse	8,000
Francis H. Robinson	3,000
Total	11,000

MARCH 6.—By the *Alene*=Savanilla:

H. W. Peabody & Co.	700
A. N. Rotholz	300
Total	1,000

MARCH 6.—By the *El Sol*=New Orleans:

Albert T. Morse	2,000

MARCH 10.—By the *Adirondack*=Cartagena:

D. A. De Lima & Co	3,500
Kunhardt & Co	2,500
Total	6,000

MARCH 10.—By the *Knickerbocker*=New Orleans:

F. H. Robinson	7,500

MARCH 10.—By the *Olbers*=Bahia:

Reimers & Meyer	2,500

MARCH 11.—By the *Saratoga*=Mexico:

E. Steiger & Co	700
H. A. Forrest & Co.	500
José Agostini	300
Total	1,500

MARCH 12.—By the *Allianca*=Colon:

A. Santos & Co.	9,685
Dumarest & Co.	3 977
Roldan & Van Sickle	2,740
I. Brandon & Bro.	2,258
G. R. Cottrell & Co.	2,250
Flint, Eddy & Co.	2 227
R. F. Cornwell	992
Eggers & Heinlein	600
Jacobo Baiz	569
Total	25,598

MARCH 12.—By the *Vilboria*=Vera Cruz:

H. Marquardt & Co.	1,000

MARCH 13.—By the *Silvia*=Cape Gracias:

Eggers & Heinlein	2,000
Samper & Jimenez	2,000
K. Mandell & Co.	1, 00
W. R. Grace & Co.	300
Leaycroft & Co.	200
For Liverpool	500
Total	6,000

MARCH 13.—By the *Madeirense*=Maranham:

G. Amsinck & Co.	500

MARCH 13.—By the *El Mar*=New Orleans:

Albert T. Morse	7,000
Francis H. Robinson	2,000
Total	9,000

MARCH 16.—By the *George Dumois*=Port Limon:

Ellinger Brothers	866
Hoadley & Co.	700
Total	1,500

MARCH 18.—By the *Alleghany*=Savanilla:

Richard Alanca	2,000
Schultz & Ruckgaber	1,300
Punderford & Co	1 200
Total	4,500

MARCH 19.—By the *El Norte*=New Orleans:

Albert T. Morse	5,000
Francis H. Robinson	2,500
W. H. Crossman & Bro.	1,800
Total	9,300

MARCH 23.—By the *Louisiana*=New Orleans:

Gillespie Brothers	500

MARCH 26.—By the *Vigilancia*=Mexico:

E. Nelson Tibbals	1,000
J. W. Wilson & Co	1,000
Hughes & Co.	500
H. A. Forrest & Co.	500
Louis Monjo, Jr., & Co	200
Total	3,200

MARCH 23.—By the *Advance*=Colon:

New York Commercial Co.	11,000
G. Amsinck & Co.	9,547
Piza, Nephews & Co	3,900
Munoz & Espriella	3,380
I. Brandon & Bro.	3,350
G. R. Cottrell & Co	3,397
Roldan & Van Sickle	3,200
J. Aparicio & Co	2,781
A. Santos & Co.	1,530
Ellinger Brothers	1,000
Hughes & Co	800
Lanman & Kemp	759
W. Loaiza & Co	760
Dumarest & Co.	756
Maitland, Phelps & Co.	500
W. R. Grace & Co	317
H. Marquardt & Co.	200
G. R. Barthold	151
Total	47,326

MARCH 26.—By the *El Rio*=New Orleans:

George J. Worth	1,500

MARCH 29.—By the *Umbria*=Liverpool.

George A. Alden & Co.	2,800

MARCH 31.—By the *Alene*=Cartagena:

D. A. DeLima & Co.	3,000
Punderford & Co.	1,000
Kunhardt & Co.	500
Total	4,500

MARCH 31.—By the *Knickerbocker*=New Orleans:

Albert T. Morse	4,500
Francis H. Robinson	1,500
W. H. Crossman & Bros.	500
Total	7,001

Total Centrals for March	167,924
Total for February	297,762
Total for January	339,937

AFRICANS.

MARCH 1.—By the *Umbria*=Liverpool: POUNDS.

Reimers & Meyer	44,200
Otto G. Mayer & Co	22,800
Total	67,000

MARCH 3.—By the *Friesland*=Antwerp:

George A. Alden & Co.	6,000

MARCH 6.—By the *St. Louis*=Southampton: George A. Alden & Co. 8,300

MARCH 7.—By the *Lucania*=Liverpool:

Reimers & Meyer	41,000
George A. Alden & Co.	14,000
For Boston	5,900
Total	60,900

MARCH 10.—By the *Tauric*=Liverpool:

Otto G. Mayer & Co	6,900
William A. Brown & Co.	2,000
Total	8,900

MARCH 13.—By the *Germanic*=Liverpool:

For Boston	3,800

MARCH 14.—By the *St. Paul*=Southampton:

Windmuller & Roelker	9,900
Reimers & Meyer	1,500
Total	11,400

MARCH 14.—By the *Etruria*=Liverpool:

Reimers & Meyer	25,200
William A. Brown & Co.	2,500
Total	27,700

MARCH 15.—By the *Peninsular*=Lisbon:

George A. Alden & Co.	100,000

MARCH 21.—By the *Campania*=Liverpool:

George A. Alden & Co.	33,300
Reimers & Meyer	18,800
William A. Brown & Co.	11,500
James Lee & Co.	7,200
Total	70,800

MARCH 21.—By the *New York*=Southampton:

Windmuller & Roelker	7,500

MARCH 22.—By the *Maasdam*=Rotterdam:

George A. Alden & Co.	111,000

MARCH 24.—By the *Moravia*=Hamburg:

Reimers & Meyer	22,000

MARCH 26.—By the *Georgic*=Liverpool:

Otto G. Mayer & Co	21,000

MARCH 28.—By the *Britannic*=Liverpool:

Otto G. Mayer & Co	11,000

MARCH 28.—By the *St. Louis*=Southampton:

Reimers & Meyer	5,000

MARCH 29.—By the *Umbria*=Liverpool:

Reimers & Meyer	75,000
George A. Alden & Co.	25,300
James Lee & Co.	15,000
Otto G. Mayer & Co.	5,000
For Boston	4,000
Total	124,300

MARCH 29.—By the *Cerenum*=Lisbon:

George A. Alden & Co.	45,500
Otto G. Mayer & Co.	21,200
Reimers & Meyer	16,800
Total	84,500

MARCH 30.—By the *Patria*=Hamburg:

Otto G. Mayer & Co.	26,000

Total Africans for March	775,100
Total for February	316,300
Total for January	424,900

EAST INDIAN.

MARCH 8.—By the *California*=Hamburg: POUNDS.

Robert Soltau & Co.	11,100

MARCH 13.—By the *Mohawk*=London:

Reimers & Meyer (Pontianak)	73,000
Reimers & Meyer	14,600
George A. Alden & Co.—(Pontianak)	66,000
Windmuller & Roelker—(Pontianak)	54,200
Total	207,800

MARCH 14.—By the *St. Paul*=Southampton:

Reimers & Meyer	6,000

MARCH 18.—By the *Taormina*=Havre:

Otto G. Mayer & Co.	13,500

MARCH 30.—By the *Lennox*=Singapore:

George A. Alden & Co.	71,700

Total East Indian for March	310,100
Total for February	265,600
Total for January	315,400

RECAPITULATION.

	POUNDS.
Pará—direct imports	2,786,300
Pará—via Europe	152,800
Centrals	167,924
Africans	775,100
East Indian	310,100
Total at New York for March	4,192,224
Total for February	2,840,862
Total for January	2,823,537

ARRIVALS AT BOSTON.

MARCH 5.—By the *Cambroman*=Liverpool: POUNDS.

Reimers & Meyer—Africans	11,900
Sgal & Co.—Africans	500
Sgal & Co.—Pará	11,790

MARCH 8.—By the *Norseman*=Liverpool:

Reimers & Meyer.—Pará	7,300

MARCH 14.—By the *Kansas*=Liverpool:

Sgal & Co.—Pará	14,000

MARCH 17.—By the *Sylvania*=Liverpool:

George A. Alden & Co.—Africans	17,980

MARCH 17.—By the *Ottoman*=Liverpool:

George A. Alden & Co.—Africans	4,500
Reimers & Meyer—Africans	21,000
Sgal & Co.—Africans	5,000
George A. Alden & Co.—Pará	22,980

MARCH 20.—By the *Michigan*=Liverpool:

Sgal & Co.—Africans	25,200
Sgal & Co.—Pará	11,200

MARCH 26.—By the *Sachem*=Liverpool:

George A. Alden & Co.—Africans	4,500
George A. Alden & Co.—Pará	13,500

MARCH 28.—By the *Bothnia*=Liverpool:

Reimers & Meyer—Africans	4,000

MARCH 31.—By the *Scythia*=Liverpool:

George A. Alden & Co.—Africans	5,967
George A. Alden & Co.—Pará	12,572
Sgal & Co.—Pará	16,000

Total at Boston for March	209,601
Total for February	210,000
Total for January	72,860

NEW ORLEANS.

MARCH.

	POUNDS.	VALUE.
Nicaragua	36,273	$13,817